X-25

Installation Manual

XBLUE Networks
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Notifications and Conventions

Hearing Aid Compatibility

All telephone endpoints are hearing aid compatible, as defined in section 68.316 of Part 68 FCC Rules and Regulations.

UL/CSA Safety Compliance

This equipment has met all safety requires and found to be in compliance with the Underwriters Laboratories (UL) 60950-1

Documentation Disclosure

The information contained in this document is subject to change without notice and may not be construed as a commitment by XBLUE Networks, LLC. The information contained herein is supplied without representation or warranty of any kind. XBLUE Networks, reserves the right, without notice, to make changes to the equipment, equipment design, and documentation as advances in engineering and manufacturing methods warrant, and assumes no responsibility and shall have no liability of any kind arising from the supply or use of this document or the material contained herein.

Warnings: This documented information is designed to assist in the installation of the new XBLUE Networks products. XBLUE Networks has done its best to give adequate warnings and cautions to advise both technical and non-technical individuals, but it is very important to use common sense when installing all electrical equipment.

WiFi Compatibility - The system has been tested and found to work adequately using XBLUE Networks' WiFi Bridge (47-9005); in most cases, the device will function correctly. However, XBLUE Networks does not guarantee that the device will function in all cases. In such cases, it will be up to the user, at their expense, to provide a Category 5, 5E or 6 Cable from the system to the device to function correctly. In addition, XBLUE Networks will not; does not; guarantee or warranty that the device will work using a other WiFi Device.

Long Distance - The use of this system may result in local, long distance, Internet access, or data transfer charges, which are the sole responsibility of the user/owner of the equipment. The safest way to avoid malicious and unauthorized access to your system is change all of the default passwords. Any access or charges that result of any unauthorized or malicious entry into to the system is the sole responsibility of the user/owner of the equipment.

FCC Statement

This equipment generates, uses and can radiate radio frequency energy, and if not installed and used properly, that is, in strict accordance with the instruction manual, may cause interference to radio and television reception. This equipment has been tested and found to comply with the limits for a Class B computing device in Subpart J of Part 15 of FCC rules, which are designed to provide reasonable protection against such interference when operated. However, there is not guarantee or warranty, written or implied, that interference will not occur in a particular installation. If this equipment causes or receives interference or fails to operate correctly, due to radio frequency interference (RFI) or electromagnetic interference (EMI), it will be fixed at the owners expense, will be required to take whatever measures are necessary to correct the interference. FCC InformationProvide the following information to the Telephone Company prior to connection the system to the network.

TABLE 1.1 FCC Information

Item	Specification
FCC Registration	D6XIG7600
FCC US	D6XKH00BIG7600
IC	3187A-IG7600
Ringer Equivalence	0.5B
Networks Address Signalling	E
Service Order Code	9.0Y
Facility Interface Code	02LS2
Required Network Interface	RJ11, RJ14 & RJ45

CE Declaration of Conformity

This equipment complies with the requirements relating to electromagnetic compatibility, EN55022 class B for ITE and EN 50082-1. This meets the essential protection requirements of the European Council Directive 89/336/EEC on the approximation of the laws of the Member States relating to electromagnetic compatibility.

Environment

The disposal of this any electronic equipment should be done in accordance with national laws and regulations.

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WARNING

1. To avoid injury to yourself, or damage to the equipment, it is important to read and understand the installation instructions carefully before installing or powering up the system.
2. Unauthorized opening the server, the telephone or other associated equipment may cause damage to the equipment and yourself as well as voiding the manufactures warranty.
3. Do not install any equipment in direct sunlight or expose it to excessive heat or fire.
4. Do not install any equipment where it can get wet by rain or other moisture or water.
5. Do not install any equipment in an area where it can be subjected to high or low impact.
6. When cleaning the equipment (system and phone) use a fine damp cloth. Never use solvents such as trichloroethylene or acetone, which will permanently damage finish of any plastic surfaces. Never use a spray cleaner as it may infiltrate the equipment and cause serious damage.
7. The equipment is designed to work in temperatures ranging from 32º to 100º, with a relative humidity of less than 80 percent.
8. Do not install any equipment within 10 feet from a device that emits radio frequency equipment, such as TV's, radios or other audio or video equipment. Other equipment to avoid is microwaves or high pulse lighting such as photography equipment or other equipment that may radiate electromagnetic fields.
9. Do not connect the LAN or WAN port to anything other than a Ethernet network. Voltage from a telephone line may cause serious damage, which is not covered by the warranty.
10. Be sure that there is no power interruptions when performing a system upgrade. If the power fails during an upgrade, the system may need to be returned to have the software reloaded, at the owners expense.
11. Do not work on or install the system during a lightning storm. If possible, it is a good idea to unplug all connections to the system during a lightning storm. Lightning damage is not covered by the manufacturer's warranty.
12. It is a good idea install the equipment where it is out of reach of children.
    Only plug the system into a standard 120 volts AC $\pm$ 10%.
13. Use only the provided 12 Volt 1.5 Amp power adapter to power up the system. Using any other power adapter may cause damage to the system.

Contents of the Box

X-25 Telephone Server	6′ Ethernet Cable
47-9005 (8) Port Telephone Switch	(4) Telephone Line Cables
Quick Installation Guide	Power Supply

About This manual

This manual was written to assist with the installation of the XBLUE X-25 System and is best used as a reference tool. We have done our best to describe all products and features as they actually work, but we apologize if the manual is incorrect in areas.

The headings in this manual are used to identify where in the system you are, and what parameters are programmed within the section.

If something seems too technical we have added a “What does that say?” section that tries to use plain English to explain it. The Questioning face ICON is used to identify these sections.

In some areas a section called “Notes:” will appear that further explains a feature or parameter. These sections are designed to show any “Special Circumstances” for use of the feature of parameter. The Pen in Hand is the ICON used to identify a “Note:”

For pagination reasons, the book may end a section or chapter with a blank page with a heading of “Notes” This page was inserted to ensure the odd and even page placement is correct and it is very convenient for you to take notes.

Table of Contents

1 Notifications and Conventions 2

Hearing Aid Compatibility 2
UL/CSA Safety Compliance 2
Documentation Disclosure 2
FCC Statement 2
CE Declaration of Conformity 3
Environment 3
Copyright Notice 3
Trademarks 3

2 Contents of the Box 5

3 About This manual 6

4 Introduction 13

LAN vs WAN 14
LAN 14
WAN 14
Client on your existing network 15

5 System Capacities 18

6 LED Lights on the X-25 19

7 System Specifications 21

8 Feature Description 25

Access Control - Browser 26
Account Code 26
Agent (UCD) Logon/Logoff 26
Alarm 26
Alternate Attendant 26
Announcement Only Mailbox 26
Answer Position 26
Automated Attendant (Receptionist) 26
Automatic Daylight Savings (NTP) 27
Automatic Hold 27
Automatic Line Select (Hot Line) 27
Automatic Provisioning 27
Automatic Route Select (ARS) 27
Backlit Display 27
Basic Calling 27
Busy Call Back 27

Busy Lamp Field (BLF) *27*
Call Abandon *27*
Call Forward *28*
Busy Call Forward 28
Direct (Always) Call Forward 28
Do Not Disturb Call Forward 28
Follow me Forward 28
Call Forking Call Forward 28
Remote (External) Call Forward 28
Call Operator *28*
Call Park *28*
Call Pickup Group *29*
Call Restriction *29*
Call Routing *29*
Call Waiting *30*
Caller ID *30*
Class of Service *30*
Conference *30*
Day & Night Service Mode *30*
Daylight Savings *30*
Default Setting *30*
Direct Inward Dial (DID) *30*
Direct Inward System Access (DISA) *30*
Direct Telephone Line Access *30*
Telephone Line 31
Extension 31
Domain Name Server (DNS) *31*
Emergency Call *31*
Extension Password *31*
EMail Delivery of Voicemail Message *31*
FAX/Modem detection *31*
Flash *31*
Flexible Numbering Plan *32*
Hot Dial Keypad *32*
Last Number Redial *32*
Line Group *32*
Live Call Record *32*
Meet me page *33*
Message Waiting Indication (MWI) *33*
Music on Hold *33*
Mutual (Group) Mailboxes *33*
Navigation Keys *33*

Night Service *33*
Numbering Plan *33*
Off Hook Preference *33*
One Touch Record *33*
Outside Calls *34*
Paging *34*
All Call Page 34
Zone Page 34
Pause Insertion *34*
Phantom Extension (Virtual) *34*
Phonebook *34*
Private 34
Public 34
Power Failure Transfer *34*
Programmable Buttons *34*
Redial *35*
Registration Server *35*
Remote Management *35*
Service Mode *35*
SIP Trunk *35*
Soft Interactive Keys *35*
Speed dial *35*
Station Lock *35*
Station Message Detailed Recording (SMDR) *35*
System Speed Dial *35*
System Time and Date *36*
Time and Date in Display *36*
Toll Restriction *36*
Transfer *36*
Traveling Class of Service *36*
Trunk Group *36*
Uniform Call Distribution (UCD) or Hunt Group *36*
All Ring 36
Linear 36
Distributive 36
UCD Agent Logon and Logoff 36
UCD Reroute 37
Virtual Extension (Phantom) *37*
Voicemail *37*
Wizard (Setup) *37*

9 System Feature Codes 39
Agent Log on/off - UCD Group *42*
Busy Callback *42*
Call Forward *43*
Call Forward - Internal 43

Call Forward - External ... 44
Call Forward - Call Forking ... *45*
Call Forward - Follow Me ... *46*
Call Park ... *47*
Call Pickup ... *47*
Call Waiting ... *47*
Class of Service - Traveling ... *48*
Distinctive Ringing ... *48*
Do Not Disturb (DND) ... *48*
Extension Feature Reset ... *49*
Feature (Flexible) Button Programming ... *49*
Feature Button Reset ... *50*
Hold Reminder ... *50*
LCD & Interactive Buttons ... *50*
Paging Allow/Deny ... *51*
Phone Lock/UnLock ... *51*
Service Mode ... *51*

10 Programming ... 53
Connecting ... *53*
Programming Parameters ... *54*
Device Info ... *55*
Summary Page ... 55
Statistics Pages ... 56
Route ... 57
ARP ... 58
DHCP Server ... *59*
Advanced Setup ... *60*
WAN Page ... 60
Static IP Settings ... 61
PPPoE ... 62
Local Area Network ... 63
Network Address Translation ... 64
Security ... 68
Parental Control ... 69
Quality of Service ... 71
Routing ... 72
Dynamic DNS ... 73

11 Wireless Local Area Network (WLAN) ... 75
Primary Wireless Network ... *75*
Wireless - Additional Networks ... *76*
Wireless Security ... 77
WiFi Protected Setup (WPS) ... 78

Wireless - MAC Filtering *79*
Wireless Bridge *80*
Wireless Advanced *82*
Station Info *83*
Power Saving *84*
XBLUE Universal WiFi Adapter *85*

12 Voice 87
Phone *87*
Phone Extension 87
Trunk *90*
SIP Trunks (Telephone Lines) 91
Direct Inward Dialing 92
Trunk Group 93
Answer Position 94
Call Routing (Rules) 95
Call Restriction Rules 97
Routing Emergency Numbers 98
System *99*
Numbering Plan 99
Service Mode 101
Transmission 102
SMDR 103
UCD Call Log 103

13 Voicemail 104
Auto Attendant *104*
Menu Options 104
Outgoing Messages (Greetings) 104
General Settings *105*
Phone Extension *107*
Virtual Extension *108*
Update MOH File *109*
Holiday Settings *110*
Advanced *111*
NAT Traversal Configuration *112*

14 Management 113
Settings *113*
Backup 113
Update 114
Restore Default 114
System Log *115*
TR-069 ..... *116*
Time Settings *117*
Daylight Savings Time 118

Access Control *119*
Service Port 119
Services 120
Access Control - IP Address 121
Password 122
PTC Configure *123*
Update Software *124*
Upgrade Phone Software *125*
Reboot *127*

15 Diagnostics 128

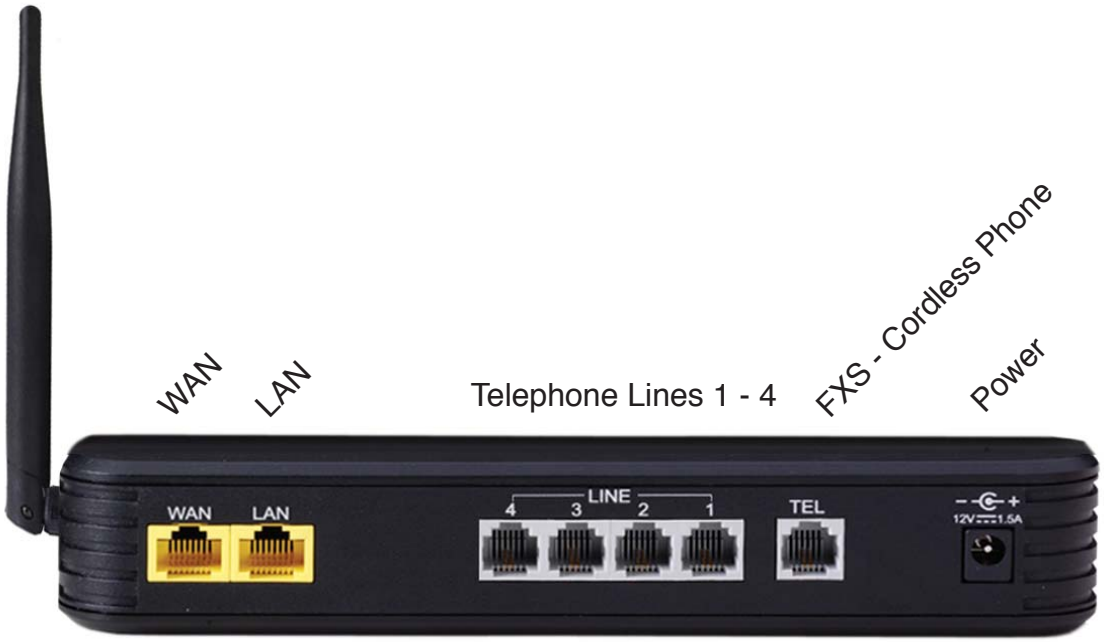
16 Appendix A - Security 135

17 Appendix B Music on Hold 141

Introduction

The X-25 Small Business System is a full featured Session Initiated Protocol (SIP) Voice over Internet Protocol (VoIP) telephone system and gateway, with an integrated automated attendant and voice mail system, which will handle up to four simultaneous calls, and equipped with four FXO Ports to accommodate four standard (PSTN) telephone lines, and one FXS Port, to accommodate one single line (analog) telephone for cordless, corded, conference room telephones or FAX machine. It will also support up to 16 SIP telephone endpoints. In addition, the X-25 includes all of the standard router features such as a Firewall, Local Area Network (LAN), Wide Area Network (WAN), plus an Integrated SIP server and 802.11 a, b, g, n wireless access, just to name a few.

Getting to know the ports on your X-25



The X-25 wireless interface uses the most common wireless security such as Shared, WEP, WPA-PSK, WPA2-PSK and WPS. WPS, which experts say is the most secure wireless security protocol because much like registering two Bluetooth® devices, the devices must be Paired “introduced” to each other and registered. Once connected the devices will automatically identify each other so this only needs to be done once.

Push the button on the top of the X-25 system to begin the pairing process

LAN vs WAN

The X-25 comes with one Local Area Network (LAN) and one Wide Area Network (WAN) port allowing it be installed as either a client or a server. The LAN port is only used when communicating to devices within the same local area, whereas the WAN can be used to communicate to local devices as well as devices over the Internet.

LAN

In reality a “Network” is nothing more than a network of wires, or Wireless Protocol, which is used to join two or more computing devices. However, it has become common place to refer to the Local Area Networks (LAN) as “The Network”, which includes computers, computer devices and peripheral equipment such as network printers within a small geographical area such a single office. The Local Area Network is also referred to as “The Intranet” meaning the Internal Network. This manual uses these terms interchangeably.

WAN

A Wide Area Network (WAN) is not limited by a geographical area and generally involves a connection to the Internet, also known as “The Web” or “The Cloud”. A connection to the Internet is done through your Internet Service Provider (ISP). When connecting the WAN port to the Internet you may use either a Static or Dynamic IP Address.

To make the WAN port “easy to find” either on your Intranet (LAN) or over the Internet (Cloud), you may use a static IP Address. If Connecting the WAN port to your Intranet, you will simply assign an Internal “Class C” IP Address such as 192.168.1.x. If you are connecting the WAN port to the Internet, and want to use a static Class A or B” IP address you will have to order the static IP Address from your Internet Service Provider. These addresses are usually referred to as “usable” or “route-able” addresses.

What does that say?

The WAN port can be programmed to connect to your existing Local Area Network (LAN), allowing it to “function” as both a WAN and a LAN port.

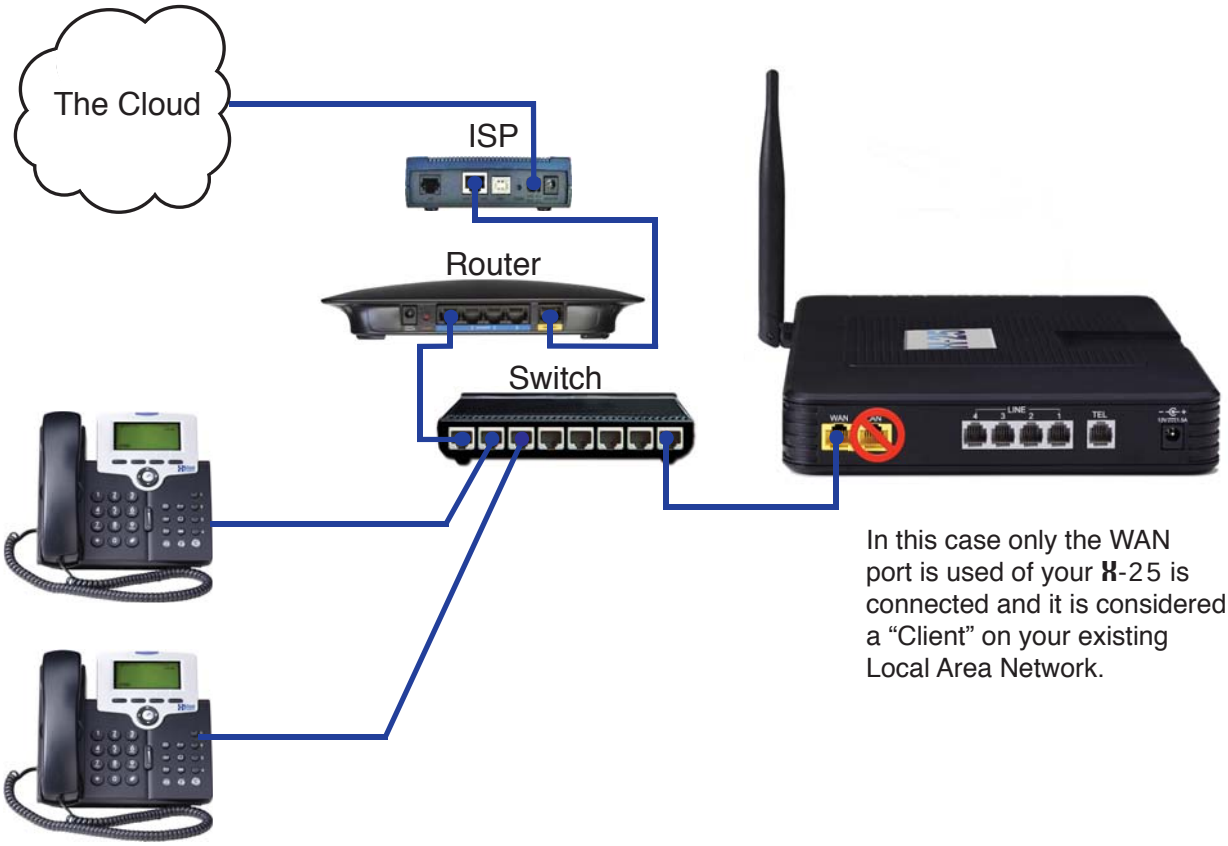
Using the WAN port will allow the network administrator to use Network Address Translation (NAT), which allows you to redirect an external, Class A or B IP Address, to an Internal location. This is often used with gammers or to access an internal server from a remote location.

The LAN port cannot communicate through the ISP either directly or indirectly using NAT. This is why it is suggested that you only use the WAN port when connecting to your existing network.

The X-25can be installed in several different ways. As a client on your existing data network, as a standalone telephone system, or as the main data network.

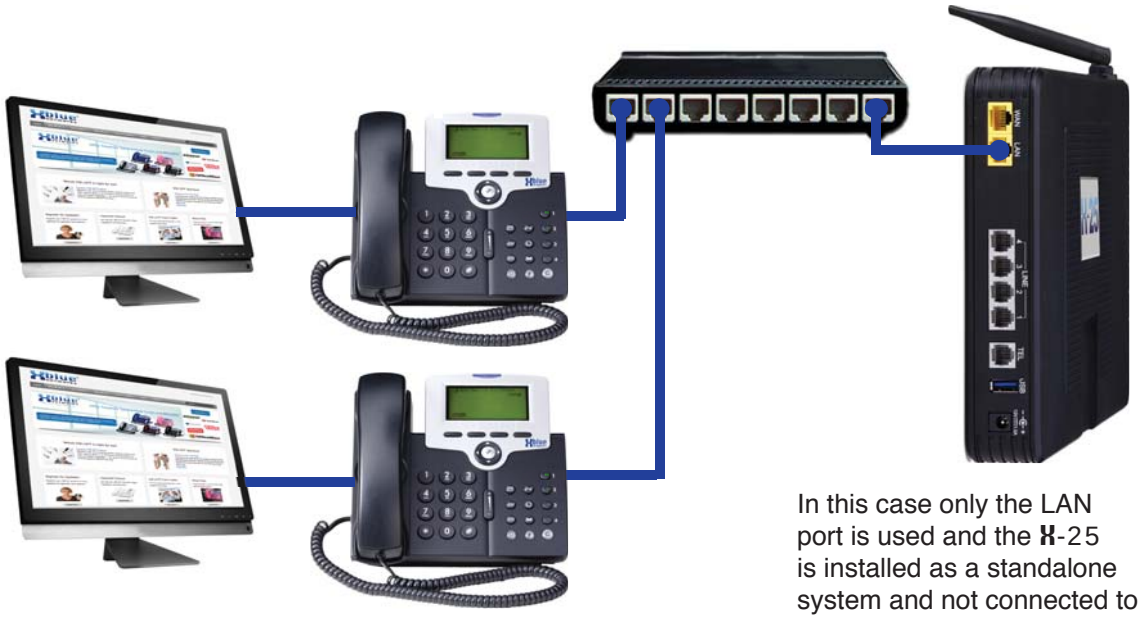
Client on your existing network

When connecting the X-25 to your existing network, use only the Wide Area Network (WAN).



In this case only the WAN port is used of your X-25 is connected and it is considered a “Client” on your existing Local Area Network.

Installing the X-25 as a Standalone telephone system:

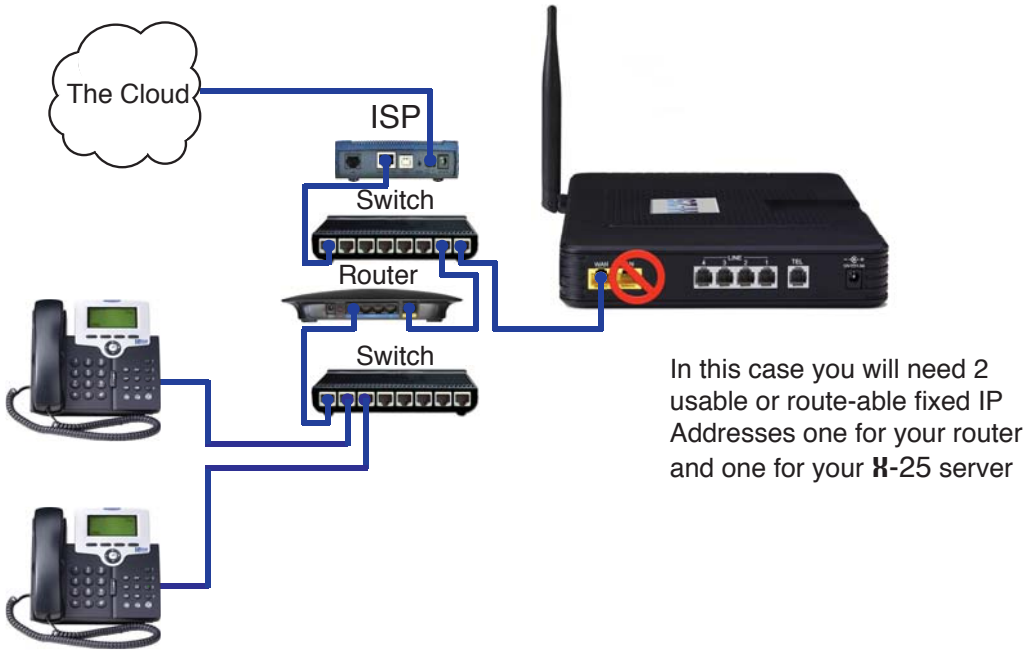


In this case only the LAN port is used and the X-25 is installed as a standalone system and not connected to the Internet.

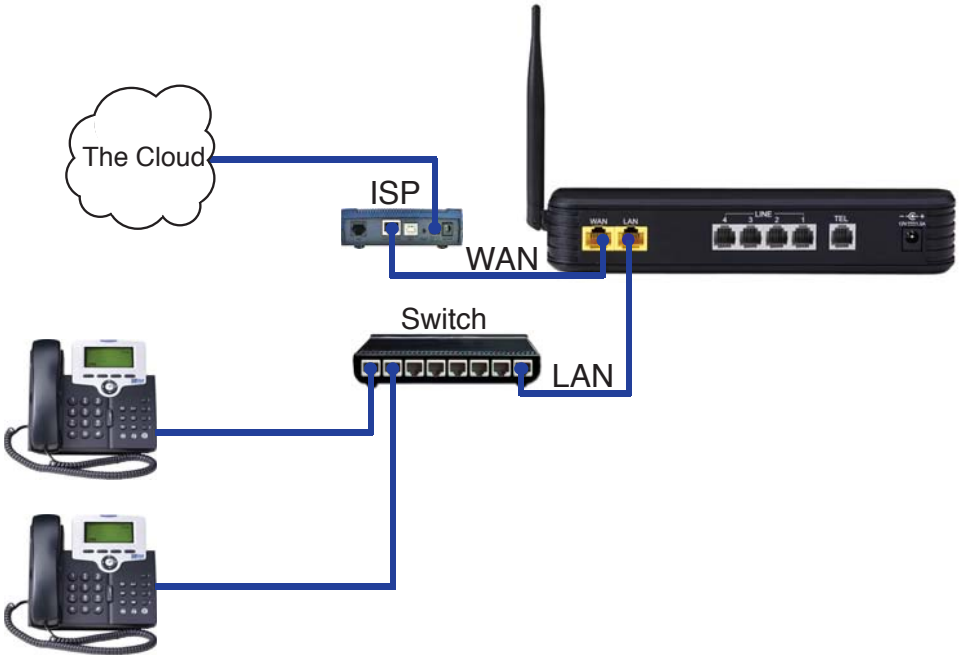
Remote Telephones - When connecting remote telephones to your X-25, it must be the “Edge Device”, which is defined as a demarcation device between the external Internet Service Provider’s (ISP) IP Address and your internal LAN IP Address. This also requires a static “Class A or B” IP Address.

There are two ways of installing the X-25 as the edge device, one is to only use the WAN port and the other is to use both the WAN and the LAN ports.

To make everything simple, connect only the WAN port of your X-25 to your existing network, by placing a network switch after the ISP Modem but before your existing router. Then enter the static (fixed) IP Address provided by your ISP into the WAN parameters. You can also use a paid service such as Dynamic DNS and a dynamic IP Address.



If you do not have an existing network, you can use the X-25 as your wired and wireless router as well as your telephone system. In this case you will use both the WAN and the LAN ports.



What does that say?

When connecting remote users the Internet Service Provider (ISP) must program their DSL/Cable modem to be a “Bridge” or a “Concurrent Bride” allowing the X-25 to join the Internet directly through your ISP’s DSL/Cable modem.

When connecting to your existing network, you will place a network switch before the WAN port of the X-25, which is why you need two route-able IP Addresses or you could program your X-25 to be your main router on the Local Area Network (LAN), which is why you only need one route-able IP Address.

Note:
Connecting the X-25 WAN port to your existing network, or directly to your ISP, will give it direct access to the Internet. This will give you access to some advanced features such as email delivery and time synchronization.

However, whenever a device is connected to the Internet it is very important that you change all passwords in the system. Failure to do so may allow unwanted outside intruders that may cause malicious intent. Refer to Appendix A for suggestions about securing your X-25 system when connected to the Internet.

System Capacities

Table 2.1 Maximum Configuration

PSTN Telephone Lines	SIP (Cloud) Trunks (Telephone Lines)	SIP Extensions	Single Line (Analog) Telephone Extensions
4 Lines	4 SIP Trunks	16 Extensions	1
8 Telephone Lines		17 Extensions (16 SIP and Cellular and 1 Analog)	

Table 2.2 Physical System capacities

Capacity	Interface	Port/Connection	Description
1	LAN	RJ45	Local Area Network 10 /100 Base-T
1	WAN	RJ45	Wide Area Network 10/100/1000 Base-T
1	FXS	RJ11	Used for Cordless, Corded or a FAX machine
4	FXO	RJ11	Standard PSTN Telephone Lines allowing 4 simultaneous calls
1	802.x	Wireless	LAN 802.11 a, b, g and n

Table 2.3 System Software Capacities

Capacity	Interface	Description
4	SIP Trunks	Interfaces for SIP (Cloud) Telephone Lines
4	Auto Attendant Ports	Can answer up to 4 calls simultaneously
16	WAN/LAN	SIP Telephone Endpoints
8		Concurrent Telephone Line Calls (PSTN and SIP)
40		Call Routing Tables
16		Voice mailboxes associated with each telephone endpoint
16		Virtual Mailboxes without telephone endpoints
50		Direct Inward Dial (Private Line Numbers)

LED Lights on the X-25

Table 2.4 LED Functions

LED Name	LED Color	System Status	Description
Power	Blue	On	Power is on and system is operational
		Off	Power and system is off
		Flashing	The system is rebooting
Wireless	Blue	On	Wireless LAN initialization successful
		Off	Wireless LAN is not operational
"TEL" Port Cordless Phone	Blue	On	"TEL" port is off hook and busy
		Off	"TEL" port is on hook (idle) or not connected
Line 1 - 4	Blue	On	Telephone Line is off hook and busy
		Off	Telephone Line is on hook (idle) or not connected
LAN	Blue	On	LAN Port is connected and operational
		Off	LAN is disabled
		Flashing	Data activity is passing through the system
	Red	On	LAN is not connected or has failed
WAN	Blue	On	WAN Port is connected and operational
		Off	WAN is disabled
		Flashing	Data activity is passing through the system
	Red	On	WAN is not connected or has failed

Notes:

System Specifications

Table 3.1 System Specification

Feature	Description
Main Processor	400 MHz Dual Core MIPS Processor Broadcom BCM6369
Processor SDRAM	External 64 MB
Processor Flash ROM	External 16 MB
Supplementary Processor	1x DSP Mindspeed M82351
System Flash (Voice Mail)	512 MB
Giga WAN PHY Chip	Broadcom BCM5481
Standards	IEEE 802.11 a/b/g/n, IEEE 802.3
Ports	1 - WAN, 1 - LAN, 1 FXS and 4 FXO
Buttons	Reset, WiFi On/Off and WPS
Ports	RJ-45 and RJ-11
LED's	Power, Wireless, Telephone Lines (4), LAN and WAN
EMI/EMC	FCC Part 15 Class B

Table 3.2 Environmental

Operating Conditions	Specification
Operating Temperature	32º F to 95º F
Storage Temperature	32º F to 95º F
Operating Humidity	10% to 80% - Non Condensing
Storage Temperature	10% to 80% - Non Condensing
System Power	12 Volts - 1.5 A

Table 3.3 IP PBX Configuration

Quantity	Interface	Connector	Description
4	FXO	RJ-11	4 PSTN telephone lines, allowing for 4 simultaneous calls
1	FXS	RJ-11	For Analog (Single Line) Telephone interface
1	LAN	RJ-45	10/100 Local Area Network
1	WAN	RJ-45	10/100/1000 Wide Area Network

Table 3.4 WLAN (Wireless Local Area Network)

Connector	Speeds	Port	Description
Wireless	802.11 a,b,g, and n	WLAN	A Local Area Network allows network devices to share and access files through a wireless connection using 802.11x protocol. Generally, a LAN uses one DHCP Server, and it is "small" in size (geographically) like a home or office, and it does not require any external ISP to translate data between endpoints.
Antenna	5 dbi single Pole		Broadcasting SSID

Table 3.5 Internet Protocol

Protocol	Documentation	Description
IP Address	RFC 950	Defines the standards used to divide IP into Classes A, B and C using Subnets
ARP	RFC 826, 3315	Address Resolution Protocol - Allows devices to find a “Host” device using the network layer (MAC Address)
RARP	RFC 903	Reverse Address Resolution Protocol - Allows devices to find a “Host” device using the network layer (MAC Address)
CHAP	RFC 1994	Challenge-Handshake Authentication Protocol - Negotiating protocol used with PPPoE. Also see MSCHAP and PAP
MSCHAP	RFC 2433, 2759	Microsoft’s version of CHAP that allows mutual authentication between peers, by piggybacking challenge and response packets on a successful packet.
PAP	RFC 1334	Simple method for the peer to establish its identity using a 2-way unencrypted handshake. Passwords are sent in ASCII format with no encryption. Also see CHAP and MSCHAP
DHCP Client	RFC 2131, 2132	Dynamic Host Configuration Protocol is used by client devices to obtain the correct settings when joining a network
DHCP Server	RFC 2132	Dynamic Host Configuration Protocol is used by server devices to obtain or assign the correct settings when joining a network
DNS	RFC 1912	A Domain Name System is the “Phone Book” for the Internet. It translates “Human Relatable” names such as www.xbluenetworks.com into the numeric IP Address. The DNS can be a local or remote server and it is a essential part of today’s Internet
HTTP	RFC 2616	Hypertext Transfer Protocol - is one of the communications protocols used to transfer information over a packet-switched network, such as an Intranet or the Internet. Typically, HTTP (at default uses port 80) initiates or receives a request/response from a client to/from a server.
ICMP	RFC 792	Internet Control Message Protocol is one of the core protocols within Internet Protocol (IP). This protocol is a reactionary protocol only responding to error messages that are received.
IP	RFC 791	Internet Protocol allows devices to communicate over a package-switched network. This protocol provides an unreliable network and makes no guarantees about sending or receiving a data package; it is a “Best Effort” protocol. Therefore, other protocols such as “TCP” were created to make data transfer more reliable.
NAT	RFC 3022	Network Address Translation allows multiple hosts on one private network, to access the Internet using one public IP Address
NAPT	RFC 2663	Network Address Port Translation increases the efficiency of NAT by translating the “Transport Identifier”, allowing a private host to multiplex into the transport identifiers to appear as a single Public IP Address
PPPoE	RFC 2516	Point to Point over Ethernet allows users to “Virtually” create a direct connection between two devices over an Ethernet Network
SNTP	RFC 1305	Simple Network Time Protocol allows devices packet-switched networks to synchronize their time from a special location
NPT	RFC 867, 868	Network Time Protocol ensures that the time is synchronized all along the packet-switching network.

Protocol	Documentation	Description
TCP	RFC 793	Transmission Control Protocol provides the reliability that Internet Protocol (IP) does not, making it suitable for applications such as File Transfer and emails.
Telnet	RFC 2946	Telnet is a reliable connection-oriented transport protocol, which is Client/ Server Based. At default Telnet uses Port 23.
TFTP	RFC 2349	Trivial File Transfer Protocol is a very basic and simple protocol, which is loosely based on the FTP protocol.
UDP	RFC 768	Using “User Datagram Protocol” networked computers can send short messages known as datagrams. Although the delivery of a UDP packet is faster it is not as reliable as TCP packets.
CLIP		Calling Line Identification Presentation

Table 3.6 VoIP & Signalling Protocols

Signalling	Documentation	Description
In/Out Band	RFC 2833	In/Out Band is used to define the method of transporting DTMF tones to use on RTP connections. In-Band are tones that are “Heard” by the distant party line DTMF Tones. Out of Band tones are used for signalling, such as caller ID Tones.
MD5	RFC 3261	Message-Digest Algorithm 5 is a widely used Cryptographic hash function (Security) that uses 128 bit hash value.
QoS	RFC 2990	Quality of Service assigns different priorities to different data packets depending on the packet requirements. Voice, for example, will receive a much higher priority than non-voice traffic, because voice traffic needs to be immediate and in order, whereas standard data packets are not needed Immediately. Therefore, QoS is used to prioritize specific packets, such as voice, within a packet-switched network. However, it does not guarantee voice quality.
T.38	ITU-T T.38	T.38 is the standard for transporting FAX transmissions, between G3 FAX devices over an IP Network.
RTP	RFC 1889, 3550	Real-time Transport Protocol provides end-to-end network transport functions suitable for applications transmitting real-time data, such as audio, video or simulation data over multicast or unicast network servers. RTP is a standardize protocol for delivering audio and video over the Internet
SDP	RFC 2327	Session Description Protocol is purely a protocol that negotiates between two endpoints to allow them to agree on a media type and format. It is intended for describing multimedia sessions and it is used for a wide range of networks and networking environments.
SIP V2	RFC 3261	Session Initiated Protocol is an applications layer control (signalling) protocol created specifically for transmitting asynchronous data such as voice and video. SIP is currently the most used IP standard used to transmit Voice over the Internet.

Signalling	Documentation	Description
ToS	RFC 791, 1060, 1122, 1123, 1195, 1247, 1248, 1349, 2474, 3168	The type of service octet is part of the Internet Protocol header that specifies the priority of the attached datagram (message).
DTMF	RFC 4733	Dual Tone Multi-Frequency Tones - also known as touch tone® - Defined protocol for transmission of DTMF tones transmitted over a packet-switched network.
AF Class	RFC 2597	One part of QoS, is Assured Forwarding Classes. This allows the administrator to divide the IP Packets into one of 12 different classes. In the event that the network becomes congested, the packets with the highest drp rate will be dropped.
EC	RFC 3246	Expedited Forwarding has the characteristics of low delay, low loss, low jitter, making it suitable for Voice, Video and other real-time services.

Feature Description

Table 4.1 System Feature Description Table

Feature	Page	Feature	Page
Access Control	page 26	Least Cost Routing (Call Routing)	page 32
Account Codes (Traveling COS)	page 26	Line Group Assignment	page 32
Alarm (Station)	page 26	Live Call Record	page 32
Alternate Attendant	page 26	Meet Me Page	page 33
Announcement Mailbox	page 26	Message Waiting Indication	page 33
Answer Position	page 26	Music on Hold	page 33
Automated Attendant	page 26	Mutual Mailbox (Group Mailbox)	page 33
Automated Daylight Savings	page 27	Navigation Keys	page 33
Automatic Hold	page 27	Night Service (Service Mode)	page 33
Automatic Line Select	page 27	Numbing Plan (Flexible)	page 33
Automatic Provisioning (PnP)	page 27	Off Hook Preference	page 33
Automatic Routing Select	page 27	One Touch Record	page 33
Backlit Display	page 27	Outside Calls	page 34
Basic Calling	page 27	Paging (All Call and Zone)	page 34
Busy Call Back	page 27	Pause	page 34
Busy Lamp Field (Busy Extension)	page 27	Phantom Extension (Virtual)	page 34
Call Abandon	page 27	Phonebook (Personal)	page 34
Call Forwarding (6 types)	page 28	Phonebook (Public)	page 34
Call Operator	page 28	Power Fail Transfer	page 34
Call Park	page 28	Programmable Buttons	page 34
Call Pickup - Group	page 29	Redial	page 35
Call Restriction	page 29	Registration Server	page 35
Call Routing	page 29	Remote (Administration) Management	page 35
Call Waiting	page 30	Service Mode	page 35
Caller ID	page 30	SIP IP Trunk (Maximum 4)	page 35
Class of Service	page 30	Soft (Interactive) Keys	page 36
Conference	page 30	Speed Dial	page 35
Day & Night Service Mode	page 30	Station Lock	page 35
Daylight Savings Time	page 31	Station Message Detailed Recording	page 35
Default Setting	page 30	System Speed Dial	page 34
Direct Inward Dial (DID)	page 30	System Time and Date	page 36
Direct Inward System Access	page 30	Time and Date in Display	page 36
Distinctive Ringing	page 30	Toll Restriction	page 36
DNS Client	page 31	Transfer	page 36
Emergency Call	page 31	Traveling Class of Service	page 36
Extension Password	page 32	Trunk Group	page 36
Email delivery of voicemail message	page 31	Uniform Distribution/Hunt Group	page 36
FAX Detection	page 31	UCD - Agent Login/Logout	page 36
Flexible Numbering Plan	page 32	Virtual Extension	page 37
Hot Dial Keypad	page 32	Voicemail	page 37
Last Number Redial	page 32	Wizard Setup	page 35

Access Control - Browser

For security, the **X**-25 is password protected with a programmable port, making it more secure. There are three different password levels; Administrator and Support, which both give you access to all aspects of programming and user which allows you to view configuration settings and statistics but not modify parameters.

Notes:
Only one administrator can log into the **X**-25 at one time. Additional attempts to enter the system will be Denied. The current administrator must logout or close their browser, without logging out, and wait for the system to automatically log you out, which will take up to five minutes.

Account Code

Also known as "Traveling Class of Service" - This allows authorized users to make calls on restricted extensions. The systems recognizes the user after the codes is authenticated and brings their less restrictive Class of Service to the new location. The user's Class of Service remains active for 60 seconds after the termination of the call before the system reinstates the original restricted Class of Service.

Agent (UCD) Logon/Logoff

Agents (extensions) may dial a code, which takes them out of all UCD groups. Once the agent logs off, they will not receive any incoming UCD Calls. The agent needs to log back in to rejoin all UCD groups.

Alarm

Each **X-2020** connected to the **X**-25 system can be set to use up to three alarms, which can be programmed to play one time or set to always. The user can select between 11 (0 - 10) different ring tones. After the alarm is reached, it will play the programmed ring tone. In addition, it can be programmed to repeat up to 10 times, at a timed interval of 1 - 5 minutes.

Alternate Attendant

A second extension may be programmed as the Alternate Attendant. The Alternate answering position serves as a backup position to the primary attendant. Telephone line ringing will forward to the alternate answering position after the preprogrammed ring alternate position time expires.

Announcement Only Mailbox

Any physical or virtual voice mailbox can be programmed to be an announcement only mailbox. An announcement only mailbox may be used to make common announcements such as business hours, directions, mass schedules for a Church, etc. These mailboxes can be accessed from the automated attendant or the attendant can transfer a call directly to the announcement. After the announcement is played the call is disconnected.

Answer Position

Each of the four analog (PSTN) telephone lines and/or SIP Trunk telephone lines can be programmed to ring at the operator, auto attendant, extensions or UCD (hunt) group for both day and night. When set to operator - callers will ring the extension that is programmed as the operator in the system. When set to auto attendant - callers will ring one of the four auto attendant ports and be answered with the appropriate day, lunch, night, holiday or temporary outgoing message. When set to extension - calls will ring only the entered extension. When set to Uniformed Call Distribution (UCD) Group - all members of the group (up to 16 members can be entered into each group) will ring.

Automated Attendant (Receptionist)

The system comes standard with an integrated four port Automated Attendant (Receptionist) which can perform up to four simultaneous task. All telephone lines, extensions and virtual mailboxes share these four ports. When the answer position, for a telephone line, is set to "Automated Attendant" the call is immediately answered and played the default or your customized main outgoing message (greeting).

Automatic Daylight Savings (NTP)

When the **X**-25 system is connected to the Internet it will automatically synchronize the date and time using Network Time Protocol (NTP). Therefore, when the time changes for daylight savings, the system will automatically change.

Automatic Hold

Automatic hold allows extension users to press a preprogrammed extension button known as direct station select (DSS) to announce a call without pressing hold first. The telephone line call is automatically placed on hold. This allows busy extension users, such as the attendant, to answer multiple calls very quickly.

Automatic Line Select (Hot Line)

Users may select how their extension functions when lifting the handset or pressing the speaker button. An extension can be set to access a specific outside line, a line group, or intercom (ICM) automatically when going off hook or pressing the speaker button. In addition, users may program a timer from 0 to 8 seconds, delay before the off hook action is taken.

Automatic Provisioning

The system comes standard with WAN Management Protocol (TR-069) which allows the system to use Auto Configuration Server (ACS) to preform auto-configuration, provision, collection and diagnostics.

Automatic Route Select (ARS)

See Call Routing

Backlit Display

The **X-2020** SIP Telephone endpoints comes with a 6 line, 128 x 64 backlit display, which can be programmed to go into sleep mode, or stay lit.

Basic Calling

There are two different types of calling; Intercom, which are calls within the system and telephone line to an external location. When a dialed number is within the system numbering plan, it is considered an intercom call. If the number is not within the system numbering plan, but matches an entry in the routing tables the call will be routed over the appropriate telephone line or line group. Related features: Numbering Plan and Call Routing.

Busy Call Back

Busy call back allows the user to dial a code when they call a busy extension to queue up for that extension. When the called extension hangs up, the calling extension will ring, when calling extension lifts the handset, the called extension will begin ringing.

Busy Lamp Field (BLF)

Busy lamp field also known as Direct Station Select (DSS) is a visual indication, usually a LED on a preprogrammed button that shows when an extension is busy. The Associated LED will be lit solid indicating that the extension or telephone line is busy.

Call Abandon

Call abandon is an timed signal which is sent from the telephone company to the system to indicate that a telephone line has disconnected. This is especially helpful when outside callers disconnect the call while they are on hold. The system receives a timed disconnect signal, which matches the preprogrammed call abandon time, from the telephone line provider, which forces the telephone line to go on-hook.

Call Forward

At default, all extensions are forwarded to voicemail. However, they can also use several other types of call forwarding such as; busy, direct, do not disturb, follow me, call forking, and Remote (External). These can be programmed using the web interface, which is easier, or by dialing the call forward code found on page 43.

Busy Call Forward

Busy call forward, forwards all incoming calls to the forwarded destination only when the extension is busy. Extensions that are busy forwarded with not ring when a second call is presented to them. However, an alert tone is heard indicating that a new tone is being routed to the forwarded destination.

Direct (Always) Call Forward

Direct call forward, forwards all incoming calls to the forwarded destination as soon as it is presented to the extension. An alert tone is heard indicating that a new call is being routed to the forwarded destination.

Do Not Disturb Call Forward

Do not Disturb (DND) call forward, forwards all incoming calls to the forwarded destination when a call it is presented to an extension in DND. An alert tone is heard indicating that a new call is being routed to the forwarded destination.

Follow me Forward

The follow me forward feature allows internal extension user to forward their extensions to a new destination This is especially helpful when waiting for an important telephone call but must go to another location, such as an impromptu meeting. An alert tone is heard indicating that a new call is being routed to the forwarded destination.

Call Forking Call Forward

Call forking is used to ring two destinations simultaneously. This feature will work for two extensions numbers, without a SIP Trunk, but with a SIP Trunk, you can ring an external number such as a cellular or home telephone. In addition, you may enter a second number in case the first number is busy.

Remote (External) Call Forward

Remote (External) call forward allows extension users to forward their incoming calls to a remote destination such as a cellular or home telephone number. The extension user can change their forwarded destination from their extension.

Call Operator

The system supports both a primary and secondary (alternate) operator which can be accessed from any SIP telephone endpoint or the analog port by dialing “0”. Any extension, SIP telephone endpoint or FXS (analog telephone port) can be assigned as the primary and secondary operator. The operator extensions are defined in the Numbering Plan.

Call Park

Call park, often called “Orbit”, is a way of placing a call on hold, where anyone within the system can access that call by dialing the call pickup code. The park location is defined in the numbering plan (the default call part locations are 731, 732, 733 and 734.

Call Pickup Group

Any extension SIP telephone endpoint can dial star " * " to pick up a telephone line that is ringing at a different extension. If multiple telephone lines are ringing the oldest ringing line will be accessed.

Call Restriction

When making a telephone line call all digits dialed will be compared to the telephone's Class of Service and Restriction Table. The call Restriction Table allows the administrator to create a rule by entering a range of digits (From - To), Trunk Access, Class of Service (COS). The system has eight classes of service, Class of Service zero (0), which has no restrictions and Class of Service seven (7), which is the most restrictive. The call restriction table is made up of two tables, an allow table and a deny table. Each entry in either table, allow or deny, is associated with a Class of Service. The combination of the entries in the allow and the deny table makes up the Class of Service. There are forty (40) call restriction tables and they work in the following way:

1. If there are no entries in either the allow or deny tables, all calls are allowed.
2. If there are entries in either table the call will be evaluated in the following manner.
   - Deny Table - If the dialed digits match an entry in the deny table the call is denied. If the dialed digits do not match an entry in the deny table, the call is sent to the allow table.
   - Allow Table - If the dialed digits match an entry in the allow table the call is allowed. If the dialed digits do not match an entry in the allow table, the call is denied.

Call Restriction Table -- Allow

No.	*From*	*To*	*Trunk Access*	*COS*	*Remove*	*Edit*	*Change Order*
1	*0*	*899*	***Y****/N*	*2*	*Y/N*	*Edit*	*Up/Down*
2	*901*	*#*	***Y****/N*	*2*	*Y/N*	*Edit*	*Up/Down*

Call Restriction Table -- Deny

No.	*From*	*To*	*Trunk Access*	*COS*	*Remove*	*Edit*	*Change Order*
1	*900*	*900*	*Y/****N***	*2*	*Y/N*	*Edit*	*Up/Down*
2	*966*	*966*	*Y/****N***	*2*	*Y/N*	*Edit*	*Up/Down*

In these examples, any time a telephone number of 900 or 966 is dialed, the call will be denied.

Call Routing

When making a call all digits dialed will be compared to the rules entered in the Call Routing Table. The call routing table is built using one or more of the forty (40) different routing rules. Each call routing condition (rule) directs the dialed digits to a specific route and is made up of eight parameters, which include the "From" and "To" dialed digits, "Minimum" and "Maximum" number of digits to evaluate, number of digits to "Delete" or "Insert" before dialing the numbers over the "Destination" route (line group).

Call Routing Table

No.	*From*	*To*	*Min*	*Max*	*Del*	*Insert*	*Destination*	*Remove*	*Edit*	*Change Order*
1	*913*	*913*	*10*	*10*	*0*	*1*	*Group 1*	*Y/N*	*Y/N*	*Up/Down*
2	*0*	*912*	*0*	*99*	*0*		*Group 1*	*Y/N*	*Y/N*	*Up/Down*
3	*914*	*999*	*0*	*99*	*0*		*Group 1*	*Y/N*	*Y/N*	*Up/Down*

This is an example of a "Home" area code for someone in Kansas. With these entries, anyone who dialed a 10 digit number with the area code of 913, the system will automatically insert a 1 in front of the number dialed.

Call Waiting

While on a call with the **X-2020** telephone you can be alerted to a second call. In the display, you will see the second call, and have the ability to pick up the call or let it forward to voice mail. This feature will not work if your telephone is busy forwarded.

Caller ID

The system is equipped to receive caller ID (requires a subscription) from the telephone line provider and will, at default, pass the information to a ringing telephone (SIP or Analog) extension.

Class of Service

Each extension in the system is assigned one day and one night class of service, which determines the extension's dialing privileges. There are eight different classes of service which are defined in the Call Restriction Table. A Class of Service (COS) of seven has the most restriction whereas a COS of zero (0) has no restrictions. (See Call Restriction and Call Routing)

Conference

The systems can conference, join together, multiple telephone (PSTN or SIP) lines or extensions, or a combination of both, to the maximum of three connections so that multiple parties can speak together simultaneously. The system also has one Conference Room, which allows up to 3 parties to conference together by dialing the conference room code. (The default code is 300)

Day & Night Service Mode

The system can run in either day or night mode and can be programmed to automatically switch between day and night mode.

Daylight Savings

The system supports manual or automatic synchronization of daylight savings. When set to automatic, and the WAN port is connected to the Internet or your existing LAN, the system will automatically change from standard to daylight savings time. When set to manual, the administrator will have to enter the update manually.

Default Setting

Using the "Restore Default" feature found in the Management area of programming will allow the administrator to reset the system back to factory default. This will also reset some of the SIP telephone endpoint parameters such as Line Keys, Call Forward Settings, Automated Answer, Phone Lock and Call Waiting. However, it may not reset any system prompts that have been rerecorded.

Direct Inward Dial (DID)

Using the SIP trunks, the system can support up to 50 Direct Inward Dial (DID) numbers. These numbers share with the connected (up to four) SIP Trunk positions. The system has a special DID ring table, which allows the administrator to direct the incoming DID numbers to a specific extension, automated attendant, UCD group or voice mailbox.

Direct Inward System Access (DISA)

DISA allows an incoming caller to enter a code into the automated attendant to gain access to system resources. At default this feature is disabled. Enabling this feature could cause unwanted long distance charges, which are the sole responsibility of the owner of the system.

Direct Telephone Line Access

Each extension can program any programmable button to be a direct access button to a PSTN or SIP Trunk telephone line. When the button is pressed they will have direct access to the telephone line.

Distinctive Ringing

Telephone Line

Each Telephone Line (PSTN or SIP Trunk) can be programmed to ring with one of eleven different ring tones.

Extension

Each **X-2020** telephone endpoint can be programmed to ring with one of eleven different ring tones. When a telephone line rings at an extension that has set distinctive ring, the telephone line ring tone will override the station distinctive ringing.

Domain Name Server (DNS)

A domain name server is a “Phonebook” for the Internet. It translates “Human Relatable” names such as www.google.com from the numeric IP Address 64.233.187.99. The DNS can be a local or remote server and it is a essential part of the Internet.

Emergency Call

The system, regardless of Class of Service, Call Routing, call Restriction or Phone lock programming, will not block any of the five emergency numbers that are programmed into the emergency call table. At default, 911 is programmed into the table.

Note:
Numbers in the Emergency Call table cannot conflict with any numbers in the numbering plan. For example, when using 3 digit extension numbers do not use “911” as one of the extension numbers because it will cause a conflict within the system.

Extension Password

All extensions in the system are assigned a password that is used to access their voice mail and when using the phone lock/unlock feature. In addition, there is an administrator password that is required when connecting to the telephone using an Internet browser.

EMail Delivery of Voicemail Message

The voicemail has the ability to send a new voicemail message to a user’s email address. The system uses Simple Mail Transport Protocol (SMTP) to send the vocemail message as a standard “WAV” file, which can be reviewed by most smart phones or multimedia personal computer. This requires the **X**-25 system to have its own Email address, such as voicemail@YourCompany.com.

FAX/Modem detection

The **X**-25 supports both FAX (T.38) and Modem Detection and auto-fallback to G.711, from an analog telephone line to the FXS (Single Line Port) in the system. Once the auto attendant answers the call it will listen for the “CNG” (FAX and Modem) tone. If the tone is heard the call is automatically transferred to the FXS (Default extension 125) extension, otherwise, the caller will hear the systems main greeting.

Flash

The Flash key (or hook switch) on an analog telephone (Single Line Telephone) connected to the system can be used to activate features such as placing a call on hook, picking up the held call, or when transferring a call to another destination.

Flexible Numbering Plan

The **X**-25 is preprogrammed with a default numbering plan which you may customize. Some features show "Start...", which means that the number shown is the first number of the sequence. For example, Start PSTN Line Number 701, which is line 1, lines 2 - 4 will be 702, 703 and 704. When changing the numbering plan it is important to remember that the numbers entered cannot conflict with each other or the numbers entered in the emergency call table, such as 911.

Description	Default Numbers	Configure
Start Extension Number	101	
End Extension Number	125	
FXS Phone Extension	125	
Operator Speed-Dial Number	0	Day/Night Alternate Day/Night
AA/Voicemail Service Number	450 - additional 451 - 459	
Start Virtual Extension Number	830 - additional 831 - 846	
Start PSTN Line Number	701 - additional 702, 703, 704	
Start SIP Trunk Number	711 - additional 712, 712, 714	
Start Trunk Group Number	80 - additional 81, 82, 83	
All Paging Number	400	
All Paging Range	LAN/WAN/Booth	
Paging Group Start Number	401	(1) 401, (2) 402, (3) 403
UCD Group Start Number	430	(1) 430, (2) 431, (3) 432, (4) 433
System Speed Dial	600	600 through 699
Start Call Park Number	731 - additional 732, 733, 734	
Conference Room	300	

Hot Dial Keypad

The **X-2020** supports Hot Dial Keypad dialing, which allows you to dial a telephone number without lifting the handset or pressing the speaker button. To speak privately, just lift the handset.

Last Number Redial

Last number redial, also known as Redial or Call Log, allows you to select previously dialed, received or missed telephone numbers by selecting them from a list stored on the **X-2020** telephone. This will require an entry in the Call Restriction Table, for your "Home Area Code".

Least Cost Routing

See Call Routing

Line Group

Each telephone line in the **X**-25 is assigned to one of four trunk groups, which are used to group similar trunks together. For example, all PSTN lines in group 1 and SIP Trunks in group 2.

Live Call Record

Also known as One Touch Record, which allows extension users to record the current conversation. Live call record is extremely helpful for remembering the telephone numbers or addresses when a pen and paper are not readily available. The recording is placed in the user's personal mailbox. This feature works with **X-2020** phones registered on both the LAN and the WAN.

Note: This feature may violate privacy laws if used in a manner that is inconsistent with requirements of these laws. Manufacturer assumes no responsibility with regard to the use of this feature. It is provided for virtue of ethical use only. The user is responsible for using this feature appropriately considering all applicable laws.

Meet me page

Meet me page allows an extension user to dial a code from any extension within the system and be connected to the person that just completed a page. Once the call is established the paging port is released and the two parties will converse privately.

Message Waiting Indication (MWI)

Whenever a new voice mail message is left for an **X-2020** telephone the light bar above the LCD display will flash and the display will update to indicate that there is a new voicemail message. The Display will show how many new voicemail messages you have.

Music on Hold

The system has one prerecorded music on hold (MOH) file that plays whenever a caller is placed on hold. The administrator can change the MOH by uploading a standard "WAV" file.

Mutual (Group) Mailboxes

The **X**-25 uses Virtual Mailboxes as special mailboxes that can appear on multiple telephone extensions. This allows a group of extensions users to share access to the same mailbox. When a new message is left in the mailbox, all extensions with a programmed button of that virtual mailbox will light, indicating that there is a new voicemail message.

Navigation Keys

The **X-2020** comes equipped with "Cell Phone Like" navigations keys, which are used to scroll through features, lists and programming parameters. They allow the user to go up, down, left right and the center key is used as Select, Enter or to say "OK" and confirm the parameters entry.

Night Service

The system can operate in two modes; day and night. The Night mode can be used to change the extension's Class of Service, where telephone lines ring and auto attendant greetings. Each extension is assigned a day and a night Class of Service, which can be used to specify dialing privileges. Thus, controlling the amount of unauthorized calls placed at night.

Numbering Plan

See Flexible Numbering Plan

Off Hook Preference

Similar to Automatic Line Select and Hot Line, the user may select to have their telephone go directly to a specific telephone line, line group, dial a group of extensions or a specific extension, or even make an outside Call by simply going off Hook or pressing the speaker Button.

One Touch Record

Also known as Live Conversation Record allows extension users to record the current conversation. Live call record is extremely helpful for remembering the telephone numbers or addresses when a pen and paper are not readily available. The recording is placed in the user's personal mailbox. This feature works with **X-2020** phones registered on both the LAN and the WAN.

Notes:
This feature may violate privacy laws if used in a manner that is inconsistent with requirements of these laws. Manufacturer assumes no responsibility with regard to the use of this feature. It is provided for virtue of ethical use only. The user is responsible for using this feature appropriately considering all applicable laws.

Outside Calls

Once Authenticated, and **X-2020** telephone can dial without going off hook, pressing the speaker button, or accessing a telephone line. In addition, the user can press the softkey under “Backsp” to delete an incorrectly dialed telephone number. Once the “Dial Time-out” timer expires (default 5 seconds), or the user press “Dial” under the display or the center navigation key (Check) the call is sent to the system for processing.

Paging

All Call Page

When doing an all call page, all LAN and WAN **X-2020** telephones (within the same subnet) that are idle will receive the page announcement. Remote telephones, or phones not on the same subnet will not receive the page.

Zone Page

Each extension can be placed into one or more page zones. This allows specific areas to make a page announcement without interrupting everyone on the system. When the page zone is dialed, all LAN and WAN **X-2020** telephones (within the same subnet) that are idle will received the page announcement.

Pause Insertion

Pause is a momentary delay in dialing when placing an outgoing PSTN or SIP trunk line from the stored number such as a speed bin. In addition, the system will automatically enter a momentary pause when an international number is dialed. To insert a pause when programming a speed dial bin, use either a upper or lower case “P”.

Phantom Extension (Virtual)

There are forty (16) special virtual extensions, which are actually mailboxes and not an extensions, which are used for personnel that needs a presence but not a physical telephone, such as outside salesmen. In addition, these mailboxes may be used for a group of individuals such as an inside sales group.

Phonebook

There are two types of phonebooks, personal and public. The personal phonebook is for the private use of the user that enters the Number and the public phonebook may be downloaded by anyone that has access to the file.

Private

Each extension has a phonebook for their exclusive use. The phonebook holds up to 200 different numbers that are stored alphabetically by the name and can be grouped by family, friends, colleague, and VIP. In addition, if incoming Caller ID matches one of these entries, the call can be assigned a distinctive ring tone.

Public

The public phonebook is a list that the administrator creates and maintains in a centralized location allowing all authenticated **X-2020** telephones to link to the list. Each user has the ability to import the list and have access to the numbers.

Power Failure Transfer

In the event of a power failure, the first PSTN (Line 1) will automatically connect to the FXS port labeled “TEL” in the system.

Programmable Buttons

Each **X-2020** telephone has the ability to program the four buttons labeled 1, 2, 3, and 4. At default, these buttons are preprogrammed as telephone lines 1, 2, 3 and 4.

Redial

Also known as Last Number Redial or Call Log, allows you to select previously dialed, received or missed telephone numbers by selecting them from a list stored on the **X-2020** telephone.

Registration Server

The system is equipped to act like a registrar server for both telephone end points and SIP trunks, which eliminates any possibility of a numbering conflict.

Remote Management

The system combines both Proxy and Registrar servers in its application. For a Registrar server, it acts as the front end to the location service for a domain, reading and writing mappings based on the contents of the Register requests. The location service is then typically constructed by a proxy server.

Service Mode

There are three service modes; Day, Night and Time. When the system is in day mode, the day outgoing message will play and the day class of service will be referenced when an extension dials a telephone number. Night mode, the night outgoing message will play and the night class of service will be referenced when an extension dials a number. If the system is set to time mode, it will automatically switch between day and night modes and the associated classes of service for day and night.

SIP Trunk

The system can support up to 4 SIP uplink servers, known as SIP Trunks. These trunks, once authenticated, are treated as any other telephone line in the system. Including the normal programming such as Call Routing, Call Restriction, and Trunk Groups. In addition, the system may be provisioned for Direct Inward Dial (DID) private numbers, which are only available over SIP Trunks. SIP Trunks are required when using the Call Forking Call Forward feature with using an external telephone number.

Soft Interactive Keys

There are four buttons under the **X-2020** telephone display that change their function, to assist the use as they use the telephone. For example, when the phone is idle, the left soft key shows “Menu”, which changes when the speaker button is pressed, to show “NUM” and the third key shows “SPD”.

Speed dial

The **X-2020** telephone has a special location for your private use of frequently dialed numbers. Unlike the phonebook, these numbers are stored by location number 0 - 9, not alphabetically, and can only be accessed by you by pressing the down navigation key from an idle telephone.

Station Lock

Using an extension’s password, users can lock their telephones. This helps reduce unauthorized users from using an extension that may have an unrestricted class of service. The use of station lock, may cause that extension to be restricted from calling 911!

Station Message Detailed Recording (SMDR)

This feature is used to monitor and report on incoming and/or outgoing telephone line (PSTN or SIP Trunk) calls and displays them chronologically by date. The SMDR information stores telephone line used, extension number, time and date, and the length of each call. For further evaluation, you may copy this table and paste it into Microsoft excel.

System Speed Dial

See Phonebook Public

System Time and Date

When connected to the Internet the system uses Network Time Protocol (NTP) to synchronize the time and date. In addition, the date and time can be set manually.

Time and Date in Display

The first line on the LCD of the idle **X-2020** telephone shows the date and time. The time format can be changed from the default, “USA Time 12 Hour” to “USA 24 Hour” or “European 12 and 24 Hour” format. When using European format, the date will also change, after 1 minute, from MM/DD/YY to DD/MM/YY format.

Toll Restriction

See Call Restriction Table

Transfer

Calls that are answered by a user at one telephone may be transferred to another destination, such as a different extension, virtual extension and UCD hunt group.

Traveling Class of Service

Also known as “Account Codes” - This allows authorized users to make calls on restricted extensions. The systems recognizes the user after the codes is authenticated and brings their less restrictive Class of Service to the new location. The user’s Class of Service remains active for 60 seconds after the termination of the call before the system reinstates the original restricted Class of Service.

Trunk Group

All Trunks are automatically placed into one of four trunk groups, which are used to group trunks (PSTN or SIP) with “Like” programming such as a local and or long distance telephone line.

Uniform Call Distribution (UCD) or Hunt Group

The system has four uniform call distribution (UCD) groups (Hunt Groups), each can support up to 16 extensions. Each UCD can be programmed as an all ring, linear or distributive ring group and if unanswered the calls can be routed to another destination such as an automated attendant menu and greeting, directly to an extension (physical or virtual) or directly to an extension’s mailbox.

All Ring

When set to all ring, all authenticated extensions that are programmed to ring will ring simultaneously.

Linear

When set to Linear the extensions are rung in the order that they are entered into the group. The system checks each extension if it is idle, it will ring, if it is busy the system will check the next extension until it finds an idle extension or until the overflow timer expires.

Distributive

When set to distributive the calls are placed into queue and the system finds the agent that is on-hook and idle the longest and will ring that member first.

UCD Agent Logon and Logoff

An Agent (extension) can be programmed into one or more UCD Groups. The Agent may dial a code, to take them out of all of the UCD groups, so that they stop receiving additional UCD Calls. This is helpful when an agent is out of the office or going to Lunch. When the agent returns, they just dial a code and they will be logged back into all of the UCD groups, in the same order that they were in before they logged out.

UCD Reroute

All UCD groups have the ability to reroute unanswered calls to an automated attendant menu greeting, voice mailbox, or physical or virtual extension. If required, a mailbox can be programmed as an announcement only, which will play a message and then disconnect the call.

Virtual Extension (Phantom)

There are sixteen (16) special virtual extensions, which are actually a mailbox and not an extension, are used for personnel that need a presence but not a physical telephone, such as outside salesmen. In addition, these mailboxes may be used for a group of individuals such as an inside sales group.

Voicemail

The system has an integrated automated attendant and voicemail system with 32 hours of message storage. Each authenticated extension, plus any virtual extensions have access to a password protected voice mailbox. For extensions that should or would not use a voice mailbox, it can be disabled. In addition, the administrator can program each voice mailbox to have e-mail delivery of a voicemail message. After a message is successfully sent to an email address the mailbox can be programmed to save the message as new, save it as old, or delete the message completely.

Wizard (Setup)

To assist in the installation of the of your new system, you may use the Wizard Setup. This will guide the administrator through configuration of the WAN, LAN, Wireless and Time settings.

Notes:

System Feature Codes

Feature	Programming Sequence	Page	Browser
Agent Logon/Logoff	Log on *91 Log off **91	page 42	N
Busy Callback	Call Ext Dial 6 Cancel *66	page 42	N
Call Forward - Call Forking (requires a SIP Trunk)	*26 + t + Ext t = 0 = ICM 1 = Outside 2 = Both Ext = Extension Number Cancel **26	page 45	Y
Call Forward - Direct	*21 + t + D t = 0 = ICM 1 = Outside 2 = Both D= Ext or Voicemail or UCD Cancel **21	page 43	Y
Call Forward - Busy	*22 + t + D t = 0 = ICM 1 = Outside 2 = Both D= Ext or Voicemail or UCD Cancel *22	page 43	Y
Call Forward - No Answer	*23 + t + D t = 0 = ICM 1 = Outside 2 = Both D= Ext or Voicemail or UCD Cancel *23	page 43	Y
Call Forward - DND	*24 + t + D t = 0 = ICM 1 = Outside 2 = Both D= Ext or Voicemail or UCD Cancel *24	page 43	Y

Feature	Programming Sequence	Page	Browser
Call Forward - Follow me This is programmed from the new extension	*25 + t + Ext + * + pswd t = 0 = ICM 1 = Outside 2 = Both Ext = Extension Number pswd The voicemail password Default is 4 zeros (0000) Cancel *25 + Ext + * + pswd	page 46	Y
Call Forward - Remote	*21 + t + * + pswd + * + O *22 + t + * + pswd + * + O *23 + t + * + pswd + * + O + T *24 + t + * + pswd + * + O *25 + t + * + pswd + * + O t = 0 = ICM 1 = Outside 2 = Both pswd The voicemail password Default is 4 zeros (0000) O = Outside Number T = Time to wait before forward Cancel = **2x x = 1 ~ 5	page 43	Y
Call Park	Default Numbering Plan 731, 732, 733, 734	page 47	Y
Call Pickup	*53 + Extension	page 47	N
Call Waiting	*98 Cancel **98	page 47	Y
Class of Service (Traveling)	*55 + Ext + pswd Ext = Extension pswd = The voicemail password Default is 4 zeros (0000)	page 48	N
Conference (3 way)	Press Hold while on a Call Press the down navigation key Make a second call When answered Press the conference button	page 48	N
Do Not Disturb (DND)	*4 Cancel **4	page 48	N

Feature	Programming Sequence	Page	Browser
Extension Feature Reset	*69 + Extension or Administrator Password	page 49	N
Feature Button Programming These parameters may be easier to program through the GUI	*70 + BN + FT BN = Button number Telephone 01~04 Sidecar 05~28 FT = Feature Type: 00 = Null 01 = Extension Number 02 = Telephone Line Number (PSTN/SIP) 03 = Call Park Dial Code 04 = Feature Key + Feature Access Code 05 = Others (Outside Number) 06 = Do Not Disturb 07 = Live Record 08 = Virtual Extension	page 49	Y
Feature Button Reset	*68 + pswd pswd = Voicemail Password	page 50	N
Page Allow/Deny	*99 Page Deny **99 Page Allow	page 51	N
Phone Lock/Unlock	*97 + pswd **97 + pswd pswd = Voicemail Password	page 51	N
Service Mode (Attendant Only)	*790 - Toggles between each mode Go Directly to a Mode *791 = Day Mode *792 = Night Mode *793 = Time Mode	page 51	N

Agent Log on/off - UCD Group

- * 91 - Agent Log on
- ** 91 Agent Log off

Description:
An extension programmed into a UCD group is considered an Agent. At times, such as Lunch, an agent will want to log out of a UCD group. When they return they will want to log back into the group.

Operation:
While idle, dial **91 to log out off the group for a break, then *91 to log back into the Group.

Notes:

1. Only extensions programed into one or more UCD group can use this feature
2. When an agent logs out, they log out of all UCD Groups
3. When an agent logs in, they log into all UCD groups
4. There is no visual indication (Lamp or LCD) when an agent is logged off

Busy Callback

Description:
If you call a busy extension, you may dial *6 to activate “Callback”. When the extension goes idle, they will receive ringing. When they answer that call, your extension will begin ringing when they go off hook.

Operation:
A confirmation tone is heard once the busy callback feature is enabled.
You may disable the callback by dialing *66

Notes:

1. Busy callback will not work if the called extension has busy call forward enabled

Call Forward

There are four different types of call forwarding; Always (direct), Busy, No Answer and DND, each call can be forwarding to an internal extension physical or virtual, voicemail, UCD, or to an external telephone number such as a cellular telephone. This allows the user to customize how calls to their extension will forward. In addition, intercom and telephone line calls can be programmed to go to the same or different locations.

Operation:

These are two programming procedures. One for Internal and one for external. These can also be programmed using a standard Internet Web Browser.

Call Forward - Internal

Dial the following to forward calls to internal locations - * + CFW + t + DDD

CFW =

21 = Always (Direct) Forward
22 = Busy Call Forward
23 = No Answer Call Forward - This entry adds a “T” at the end (* + CFW + t + DDD + T
24 = Do Not Disturb

- t =
- 0 = For Intercom
- 1 = For outside Lines
- 2 = For both intercom and outside lines

- DDD =
- Extension, physical or Virtual
- Automated Attendant
- UCD Group

- T =
- Wait time (0 to 60 seconds)

Examples:

* 21 2 450 = Direct forward to voicemail,
* 22 2 124 = Busy call forward to Extension 124

To Cancel the forwarding dial ** + CFW

Examples:

** 21 Cancel Direct Forward
**22 Cancel Busy Forward

Forwarding can be done using the Web Browser - click on the “Phone” page and locate “Call Forwarding.

Call Forward - External

External Call forward allows you to forward your extension to an external telephone number. This will require one incoming and one outgoing telephone line to complete this operation. The call, once forwarded are monitored by the FXO to FXO Call Duration time, which, at default, is set to 5 minutes.

Operation:

Call Forward - External

* + CFW + t + * + pswd + * + Outside Number

CFW =

21 = Always (Direct) Forward
22 = Busy Call Forward
23 = No Answer Call Forward - This entry adds a “T” at the end (* + CFW + t + DDD + T
24 = Do Not Disturb

- t =
- 0 = For Intercom
- 1 = For outside Lines
- 2 = For both intercom and outside lines

- pswd =
- Voicemail password default is 4 zeros (0000)

- Outside Number =
- Any 7 or 11 digit telephone number such as a home or cellular telephone

- T =
- Wait time (0 to 60 seconds)

Examples:

* 21 2 450 = Direct forward to voicemail,
* 22 2 124 = Busy call forward to Extension 124

To Cancel the forwarding dial ** + CFW

Examples:

** 21 Cancel Direct Forward
**22 Cancel Busy Forward

Notes:

1. Follow me forward is an intercom function only
2. Direct call forward overrides all other forwarding, followed by DND and then Busy/No Answer Forwarding
3. When using external forward, it will require one inbound and one outbound telephone line to function correctly. Therefore, each call takes two telephone lines.
4. Once a call is established, the FXO to FXO Call Duration Time restricts the length of each call.

Call Forward - Call Forking

Description:

This feature will allow a transferred telephone line or intercom call to ring at two simultaneous destinations, such as an extension (LAN/WAN) or a cellular telephone. When one party answers the call both stops ringing.
*** When Call Forwarding - Call Forking is used to an external number requires a SIP Trunk!

Operation:

To activate:

- *26 + t + Extension Number
- *26 + t + * + pswd + * + Outside Number
  - t =
  - 0 = For Intercom
  - 1 = For outside Lines
  - 2 = For both intercom and outside lines

  - pswd =
  - Mailbox password - default is 4 zeros (0000)

To cancel:

- **26

Notes:

- This feature will not work when the extension is programmed as the attendant or alternate Attendant
- This feature will not work for calls that ring directly or calls that are transferred into a UCD group
- Telephone line calls may require that it is transferred to activate this feature
- This feature, if forwarded to an external number, will only work with one or more SIP Trunks
- This feature will work to ring your extension and the entered extension within the same system
- Phone must be within the same subnet for intercom call forking to work correctly

Call Forward - Follow Me

Follow me forward allows the user to use a different telephone extension and still receive their calls. Go to the new location and enter the following information. Don't for get to dial the "*" before the password or the enter will not work.

Operation:

Call Forward - Follow Me

*25 + t + Ext + * + pswd

- t =
- 0 = For Intercom
- 1 = For outside Lines
- 2 = For both intercom and outside lines

- Ext =
- Extension Number

- pswd
- The Voicemail password 4 zeros (000)

To Cancel the forwarding dial ** + CFW + * + pswd

Examples:

** 25 124 * 0000

Call Park

Call park, often referred to as “Putting a call into Orbit” allows extension users to place a call into a special holding area that can be retrieved by any other extension in the system by dialing the Park Answer Code.

Operation:

While on a telephone line call, the extension presses a preprogrammed call park button to park the call. Any other extension in the system can dial the park code or press their preprogrammed button to retrieve the call.

Notes:

1. Only extension with a programmed call park button is allowed to park a call
2. Any extension that dials the park code while a call is placed in a park location, is able to retrieve the call
3. A call placed into a park location will receive Music on Hold

Call Pickup

This feature allows the user to pickup a call that is ringing at another extension.

Operation:

While a call is ringing at another extension, press the preprogrammed call pickup button or dial the call pickup code, *53 + Extension Number. If the extensions are in the same pickup group the call will be picked up, otherwise the extension will receive error tone.

Notes:

1. Call pickup does not work with the FXS (analog (SLT) telephone).
2. Both extensions must be in the same Pickup Group.

Call Waiting

When using an **X-2020** telephone you can enable call waiting which will send an special alert tone to your telephone, indicating that a second call is ringing your extension. This tone can be disabled. If busy forward is programmed, this feature will not work.

Operation:

To enable Call Waiting - dial *98 - this will allow the second call to ring.
To disable Call Waiting - Dial **98 - this will not allow the second call to ring.

Notes:

1. This feature only works with the **X-2020** telephone

Class of Service - Traveling

This feature allows the user to roam from one extension to another and retaining their dialing privileges, regardless of the telephone's programmed Class of Service

Operation:

When making a call from a telephone extension with a more restrictive class of service, enter *55 + Your extension number + Your voicemail password, default is 4 zeros (0000). You will now be able to place your call. This extension retains the new class of server for one minute after the call has been disconnected.

Notes:

1. The extension retains the new class of server for one minute after the termination of your call.

Distinctive Ringing

At default all of the **X-2020** extensions ring in the same way. However, each user may select from eleven (11) different ring tones making it easier to determine when their telephone is ringing. In addition, each telephone line (PSTN or SIP) can be programmed with a distinctive ring tone making it easier to determine which line is ringing.

Operations

This can be programmed using the telephone menu or using a standard Internet Web Browser.

Notes:

1. In the event that both a telephone line and an extension telephone is set to have a distinctive ring, the telephone line ring assignment takes Precedence.
2. Priority of distinctive ringing:
   - Caller ID ring type is referenced first
   - Telephone line ringing is referenced second
   - Telephone extension is referenced third

Do Not Disturb (DND)

When DND is active all calls to the telephone is blocked. When DND call forward is set, calls will forward to the DND destination such as voicemail. If not, the call will receive a busy signal.

Operation:

From an Idle telephone dial * 4 to enable DND and block calls
From an idle telephone dial **4 to disable DND and allow calls

Notes:

1. DND forwarding overrides all other forwarding, when DND is enabled, except Direct Call Forward.
2. This feature can be disabled by the system administrator.
3. When DND is enabled, the user will receive stutter dial tone when they go off hook.
4. When using the **X-2020** telephone and DND is enabled, a special ICON will appear on the display showing a small "X" in the upper right corner.
5. Other extensions will not receive an indication that an extension is in DND until they call the extension.

Extension Feature Reset

This feature is a quick way to deactivate several features that have been changed from factory default.

Operation:

From the extension dial *69 + The extension's voicemail password or the administrator password

The following will be set back to factory default:

- Call Waiting
- Paging Accept
- All programmed buttons are returned to default
- Phone Lock is disabled
- All programmed call forwarding is removed
- DND is disabled
- The Extension (Agent) is logged into all programmed groups
- Auto Answer is disabled
- All programmed distribution lists are deleted

Notes:

1. This is good when troubleshooting extension anomalies

Feature (Flexible) Button Programming

The four buttons on the **X-2020** can be reprogrammed to accommodate a telephone line or one of the system features. At default all four buttons are programmed as telephone lines 1 ~ 4. All of these feature can be, and may be easier to programmed using a standard Internet Web browser.

Operation:

From an Idle **X-2020** telephone dial *70 + BN + FT

1. BN = The button to be programmed; 01 - 04
2. FT = The numeric value of the of the feature code
   - 00 = Blank Button
   - 01 = Extension; can be a physical or virtual extension
   - 02 = Telephone Line (PSTN or SIP)
   - 03 = Call Park; you must enter the Park locations. Default are 731~734
   - 04 = Feature key; you must enter the feature code. Such as *91 Agent Log in or 400 Page
   - 05 = Others; such as a frequently dialed number. Just enter the number as it would be dialed.
   - 06 = Do Not Disturb - There is no need to enter *4 or **4 they system does it automatically
   - 07 = Live Record
   - 08 = Virtual Extension; you must enter the extension number default is 830 - 846

Notes:

1. Most feature can be programmed on a button
2. Some features require one button to enable and another to disable a feature
3. Some features require a button to use.

Examples are on the next page:

Programming Buttons - Example

Table 5.2 Call Park on Button 4

BN Program Code	BN Number	Call Park	Park Location	Entry
*70	04	03	731	*710403731

Table 5.3 Agent Log On/Off on Buttons 3 and 4

BN Program Code	BN Number	Feature	Log on/off codes	Entry
*70	03	04	*91 (Off)	*700304*91
*70	04	04	**91 (On)	**700404**91

Table 5.4 Do No Disturb on Button 4

BN Program Code	BN Number	DND	No Code Needed	Entry
*70	04	06		*700406

Feature Button Reset

The feature is used to bring the programmed buttons back to factory default. If using the **X-2020** telephone, the buttons on the phones will be reset to PSTN lines 1~4.

Operation

Dial *68 + The extension's mailbox or admin password

Notes:

Hold Reminder

Each time the programmable "Hold Reminder" timer is exceeded, a reminder tone will be heard at the extension that placed the call on hold.

Operation:

Each extension can enable or disable the hold reminder as well as adjust the length of the timer.

Notes:

1. These features can be programmed using the telephone or using a standard Internet Browser

LCD & Interactive Buttons

The **X-2020** has four interactive "Soft Buttons" that change as the phone is being used. These soft buttons will assist you with the programming and operation of your phone.

Operation:

Notes:

Paging Allow/Deny

This feature allows the user to enter a code to allow or deny paging at their extension.

Operation:
To enable paging deny (to block paging at your extension) dial *99
To disable paging deny (to allow paging at your extension) dial **99

Notes:

Phone Lock/UnLock

The phone Lock/Unlock feature allows the user to lock their extension to prevent someone from making unauthorized calls from their extension. The phone lock/unlock feature does not block intercom calls or any calls that are entered into the “Emergency Numbers list, but it will block all other telephone line (PSTN or SIP) calls.

Operation:
To lock the phone dial *97 + the extension’s mailbox password the default password is four zeros (0000)
To unlock the phone dial **97 + The extension’s mailbox password the default password is four zeros (0000)

Notes:

1. Locked extension’s can only make intercom or emergency calls

Service Mode

The operator has the ability to change between the system’s three service modes; Day, Night and Time. When the system is in day mode, the day outgoing message will play and the day class of service will be referenced when an extension dials a telephone number. Night mode, the night outgoing message will play and the night class of service will be referenced when an extension dials a number. If the system is set to time mode, it will automatically switch between day and night modes and the associated classes of service for day and night.

Operation:

Only the programmed attendant has the ability to swap between the service modes:

- Dial *790 - displays the current mode
- Dial *791 to change the system into day mode
- Dial *792 to change the system into night mode
- Dial *793 to change the system into time mode, to allow the system to automatically switch between modes based on the programmed “Service Time Mode Table”.

Notes:

Programming

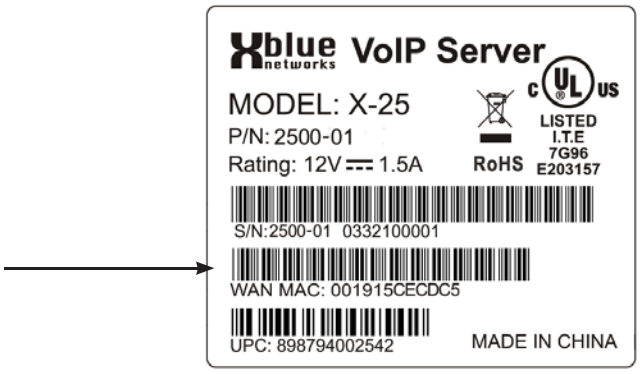
The X-25 system can be programmed using a standard Internet browser, such as Windows® Internet Explorer. To log into the system, connect a Personal Computer (Desktop or Laptop) to the LAN port of the X-25. Once the computer is connected to the X-25 you will be able enter the IP address of system, which at default is 192.168.10.1.

Connecting

Open Internet Explorer and in the address bar enter 192.168.10.1 and press enter.

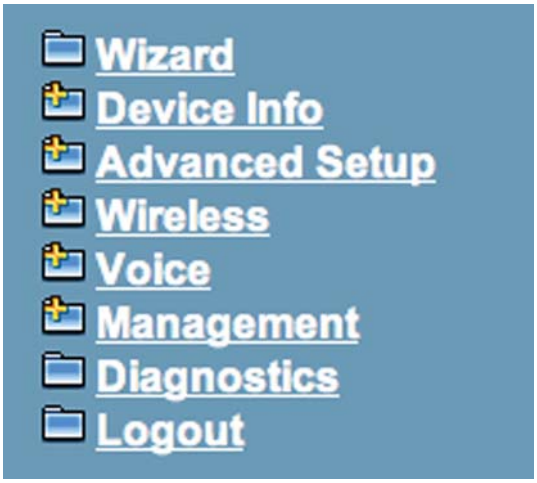
This will bring up the Login window

The User name to log into the X-25 system is admin2583 and the password is admin plus the last 6 alphanumeric characters of the systems MAC Address. The MAC Address can be found on the back of the system (see the label below) and is written, xx.xx.xx.xx.xx.xx. Enter the alphanumeric characters in lower case, with no spaces, for example cecdc5.



Programming Parameters

There are eight major sections that make up the programming parameters of the X-25 system. Two sections, “Device Information”, which shows the current networks’ status and “Diagnostics”, which shows the status of the WAN/LAN, Standard PSTN and SIP IP telephone lines, the automated attendant ports, and the FXS, Analog (SLT) port, both are for information only.

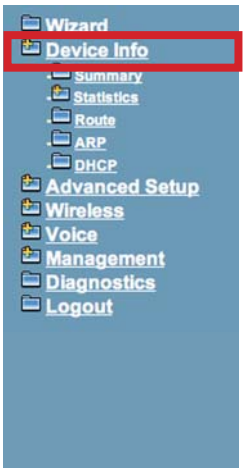


The X-25 has a setup wizard, which walks you through the setup of your new system. The system comes up working as a wired and wireless router and telephone system, without any programming, however, you may want to customize the settings for you installation.

The Wizard goes through the WAN, LAN, Wireless and (NTP) Time settings, all of which can be programmed in the Advanced Setup and Wireless settings.

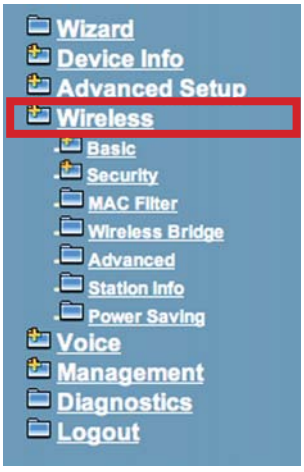
The “+” in the menu folder indicates that there are parameters contained within the folder. When clicked on, the parameters will expand.

Device Info

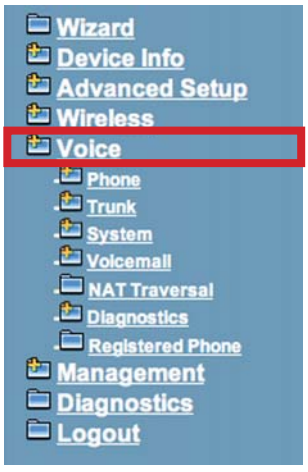


Advanced Setup

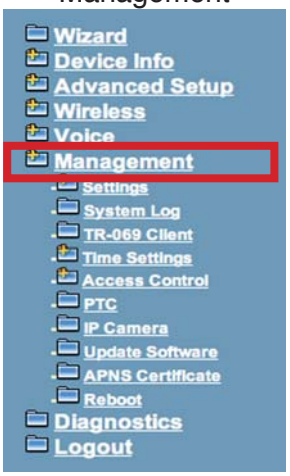
Wireless



Voice



Management

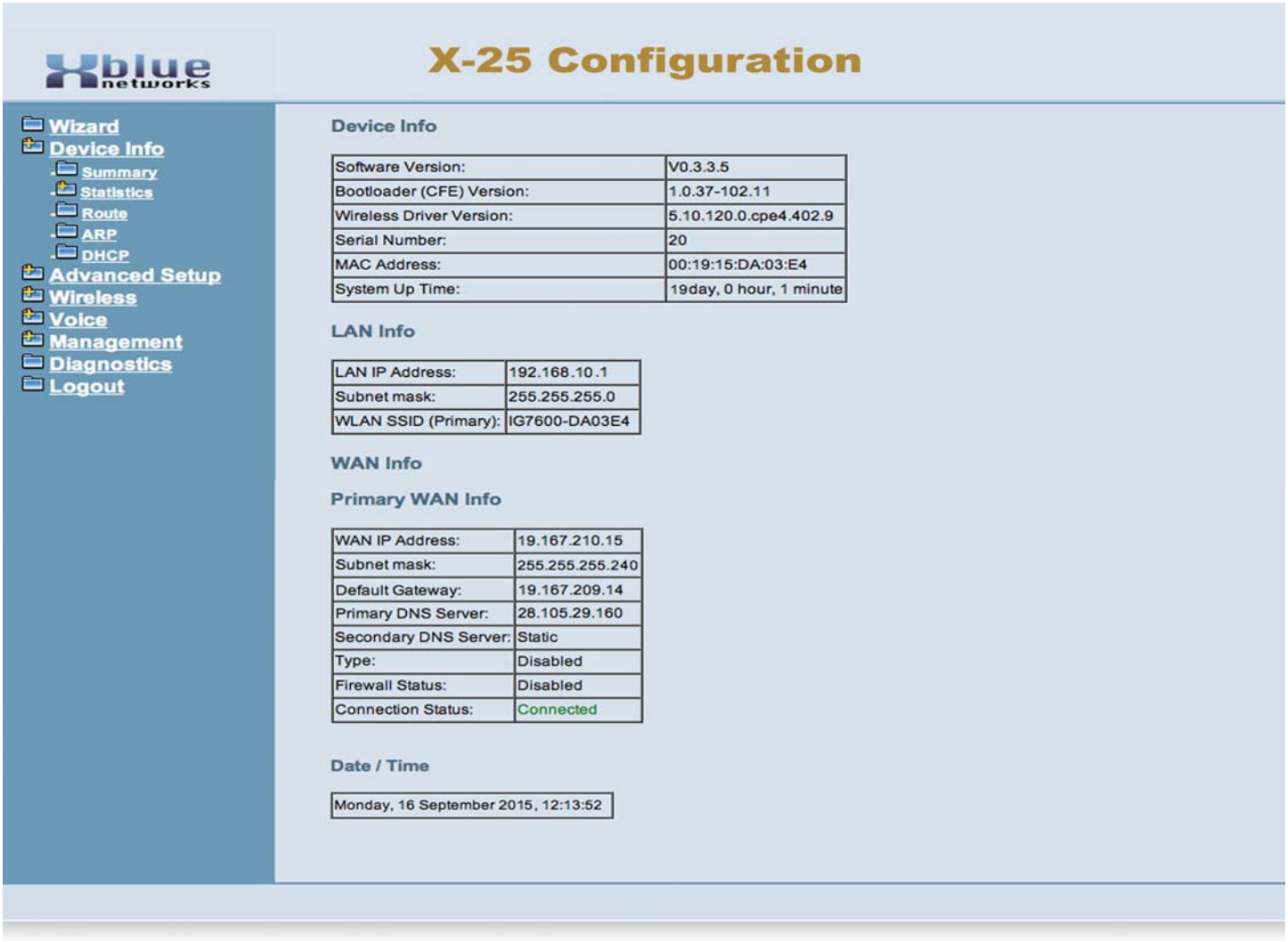


Device Info

The Device Info page shows the software and hardware versions as well as the LAN and WAN port, IP address and the date and time.

Summary Page

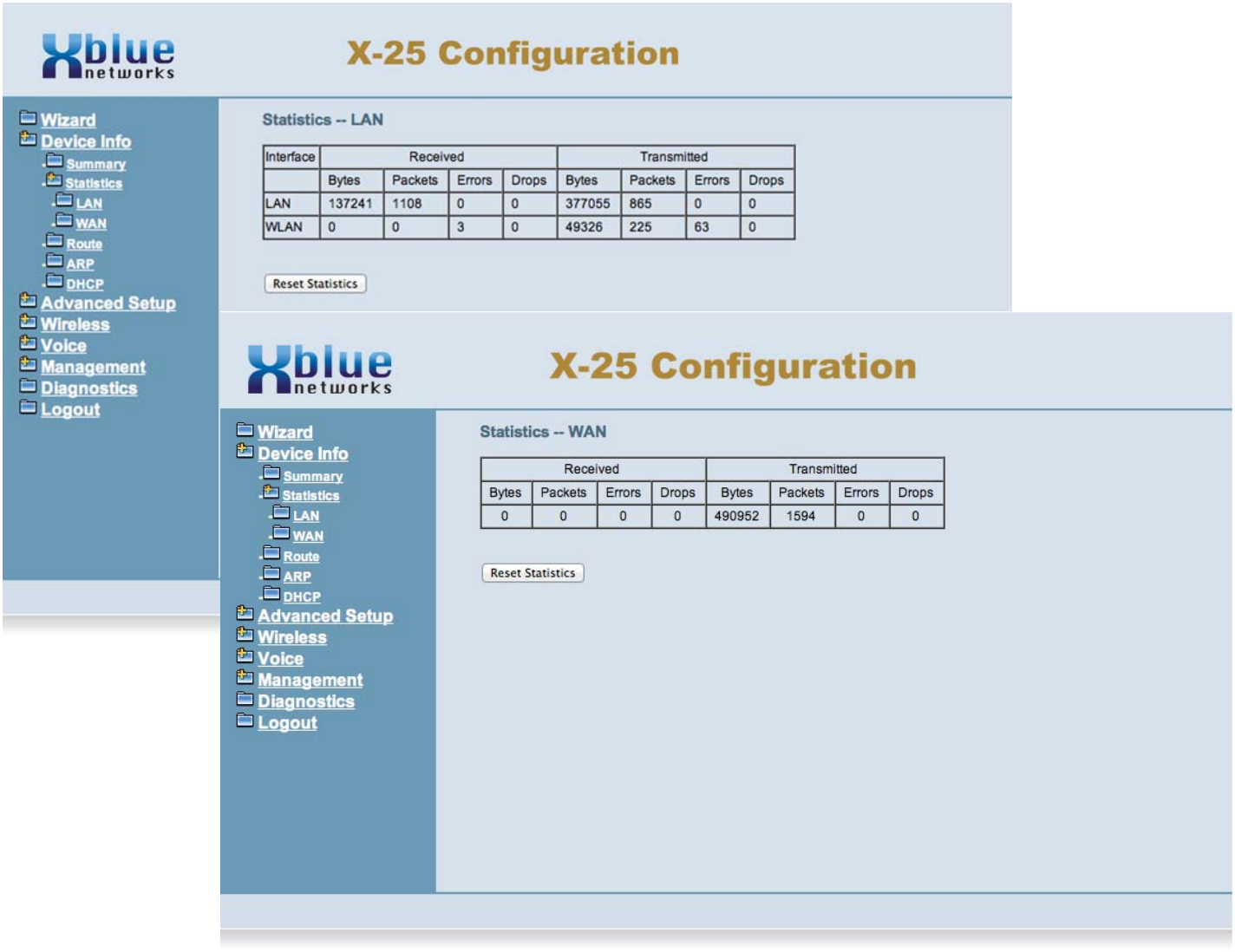
The summary page shows information about the device, including software and hardware versions, MAC Address and how long the system has been on line and operational. In addition, it shows the current status of the LAN and WAN ports.



“Device Info”

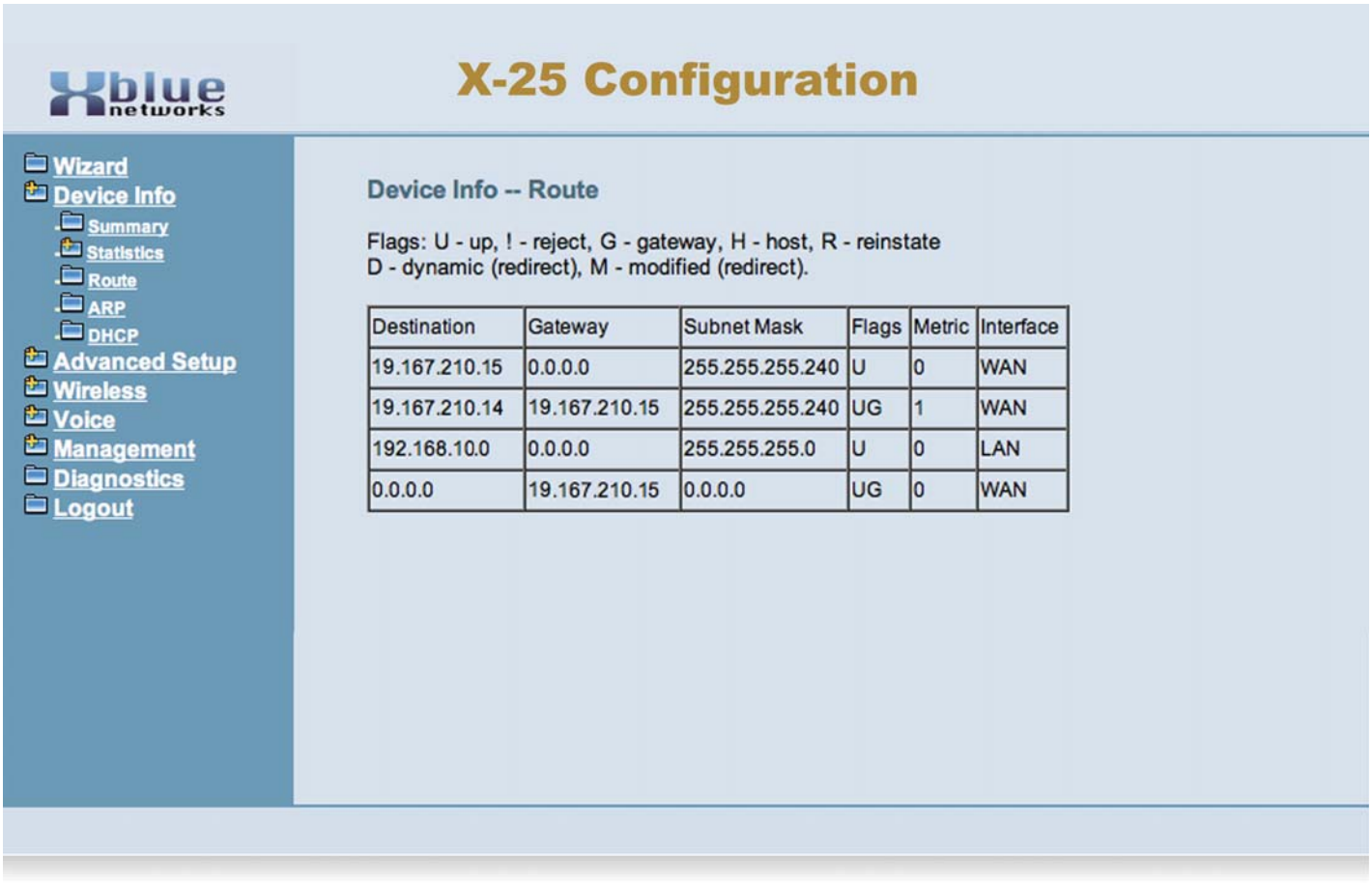
Statistics Pages

The Statics pages show the amount of data received and transmitted on both the LAN and the WAN ports of the system. This is information can be very helpful for troubleshooting the system.



Route

The Route table shows the destination, Gateway and Subnet Mask, as well as the Flag, and different devices on the network.



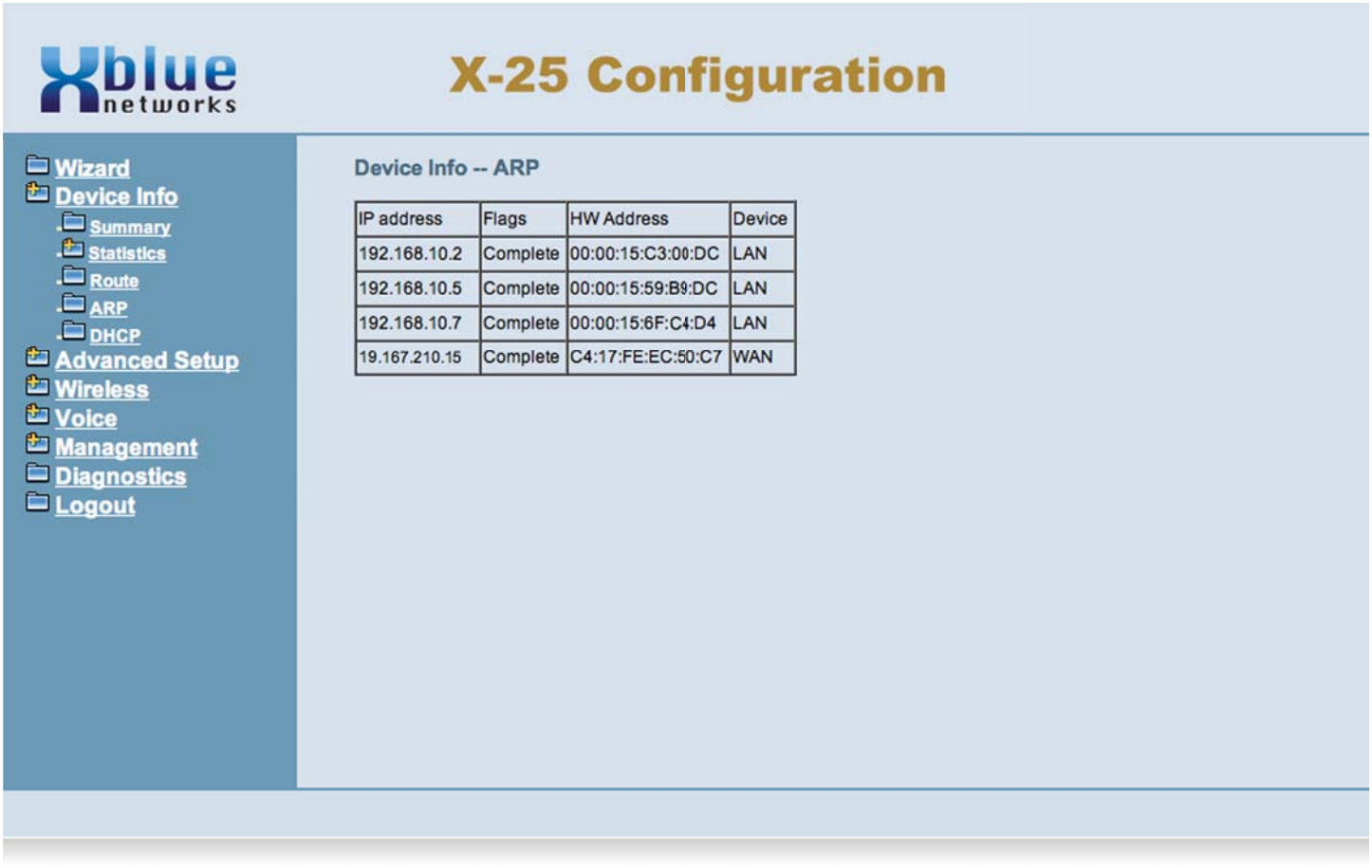
The Flag column shows the status of each device.

Flags	Meaning
U	The device is up and operating
!	The device is Rejected
G	This defines the Gateway
H	This indicates the Host, if other than this system
R	Reinstate
D	Dynamic Redirect
M	Modified (Redirect)

“Device Info”

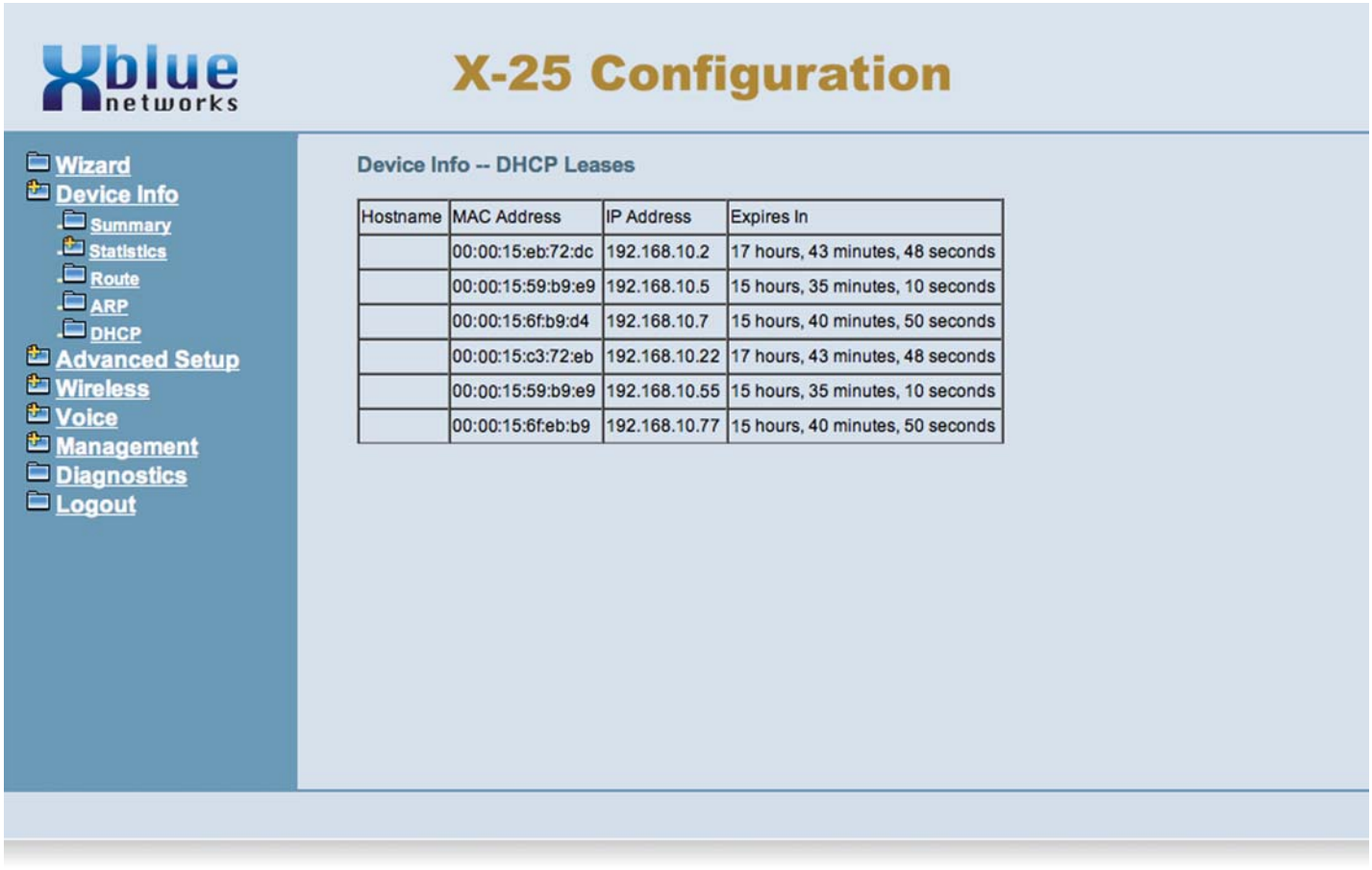
ARP

The Address Resolution Protocol (ARP) table is where the system catalogs the IP Address of a device with its physical hardware (MAC) address. In addition, this page shows which device (LAN or WAN) is using the specific IP Address.



DHCP Server

When using the LAN port, the system can be used as your main router allowing computing devices to automatically be assigned an IP Address. When set this way, the system becomes your network’s Dynamic Host Configuration Protocol (DHCP) server, otherwise this table will be empty.



“Advanced Setup”

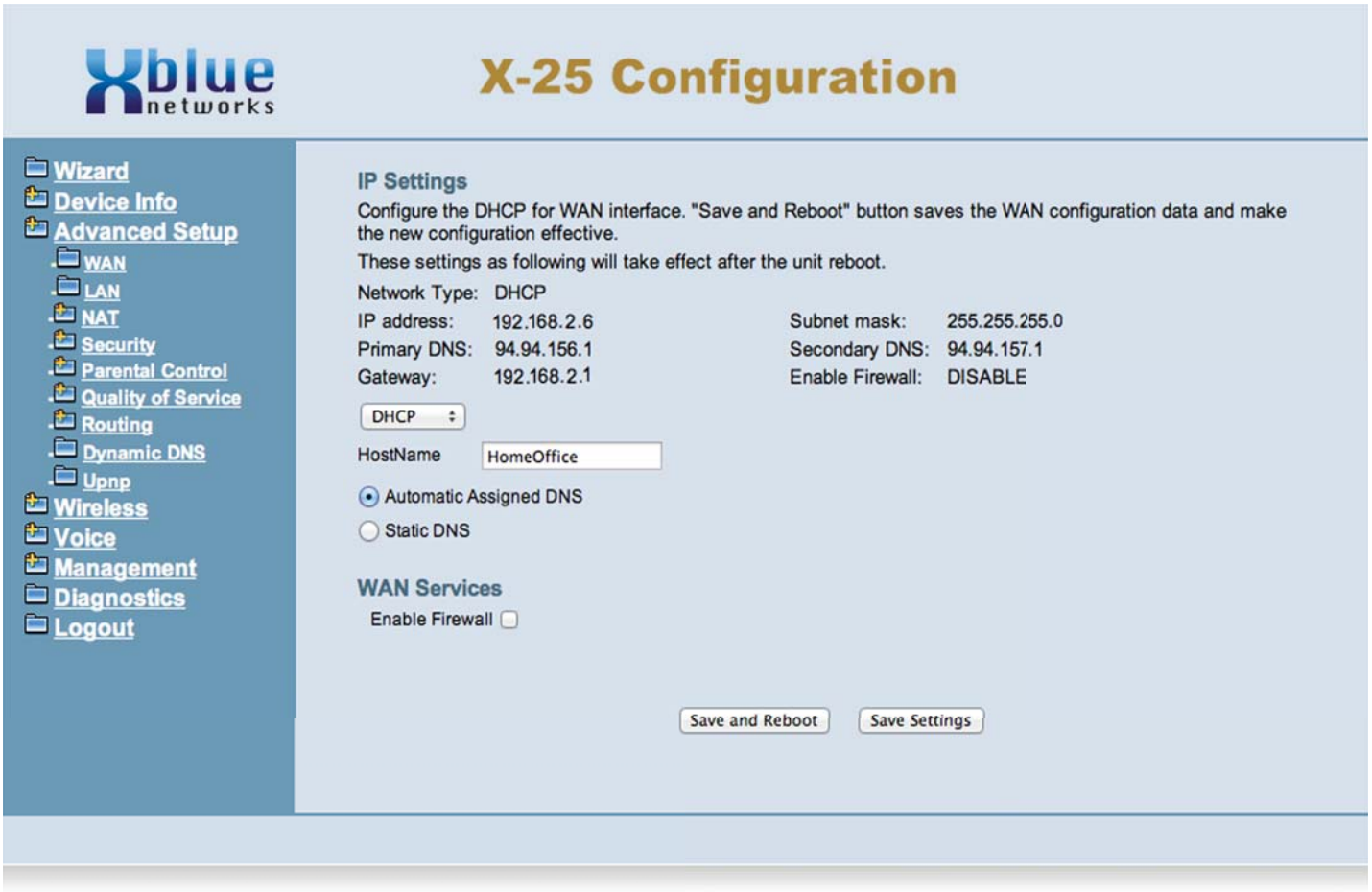
Advanced Setup

WAN Page

At default the WAN port is set to automatically connect to your existing network using Dynamic Host Control Protocol (DHCP). Your existing router will assign, known as lease the WAN port an IP Address, Subnet Mask, Default Gateway as well as a primary and secondary DSN Servers.

Using DHCP to connect the system is very convenient and makes it easy to install but these leased addresses may change at any time, which could make the system difficult to locate. Therefore, it is a good idea to enter a static IP address. You may enter a Class A or B IP address, which is used on the Internet, or a Class C, which is reserved for a Local Area Network.

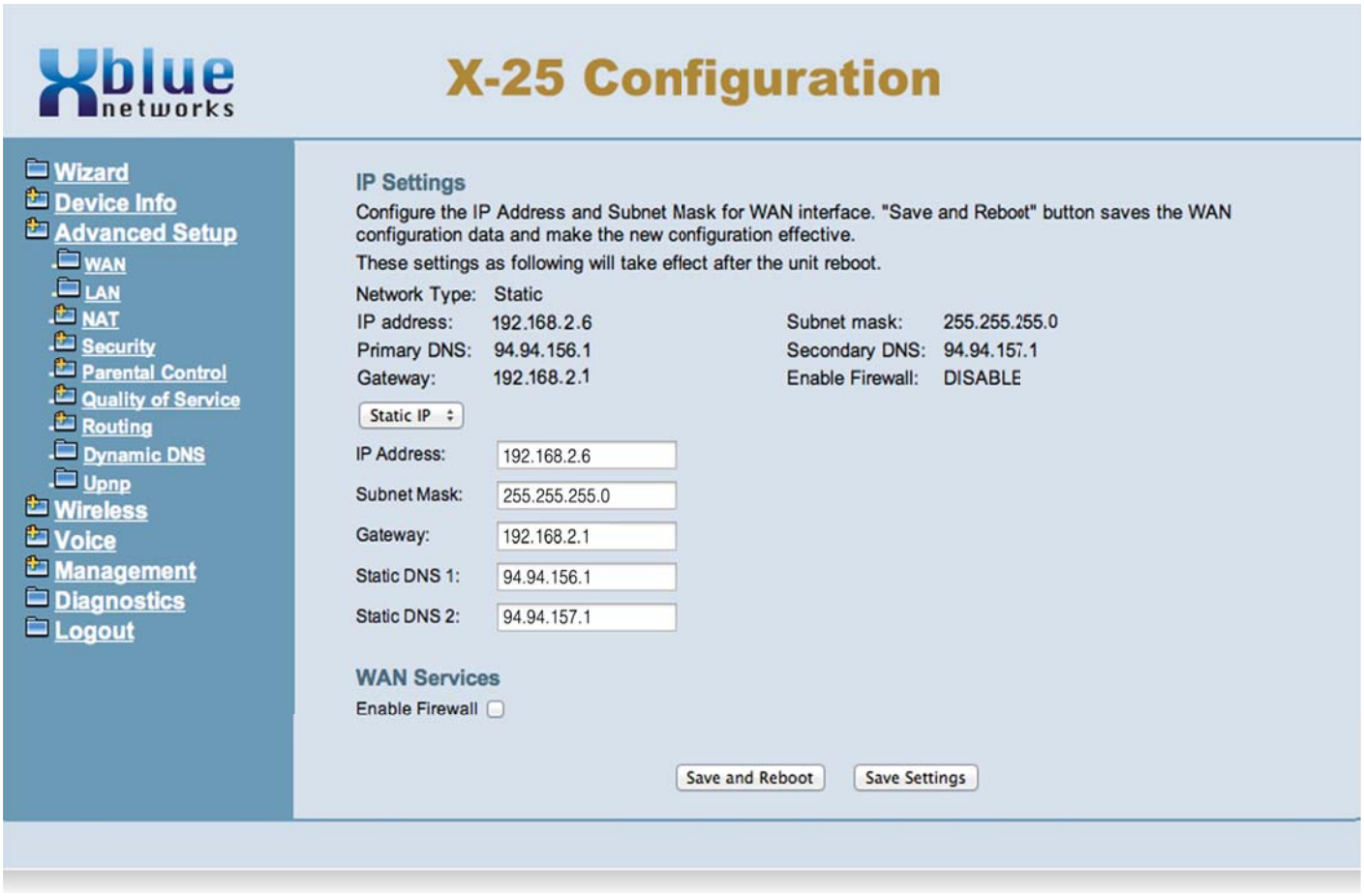
In this example, the WAN port is being connected to your existing network.



Static IP Settings

Select Advanced Setup WAN, and make a note of all information under “Network Type” and then using the drop down menu Select “Static IP”. Enter the Static IP address, from your ISP, or from your existing Network. Once the information is entered, press Save and Reboot. The system will take about 2 minutes to reboot and will be on line and operational when the power light stops flashing.

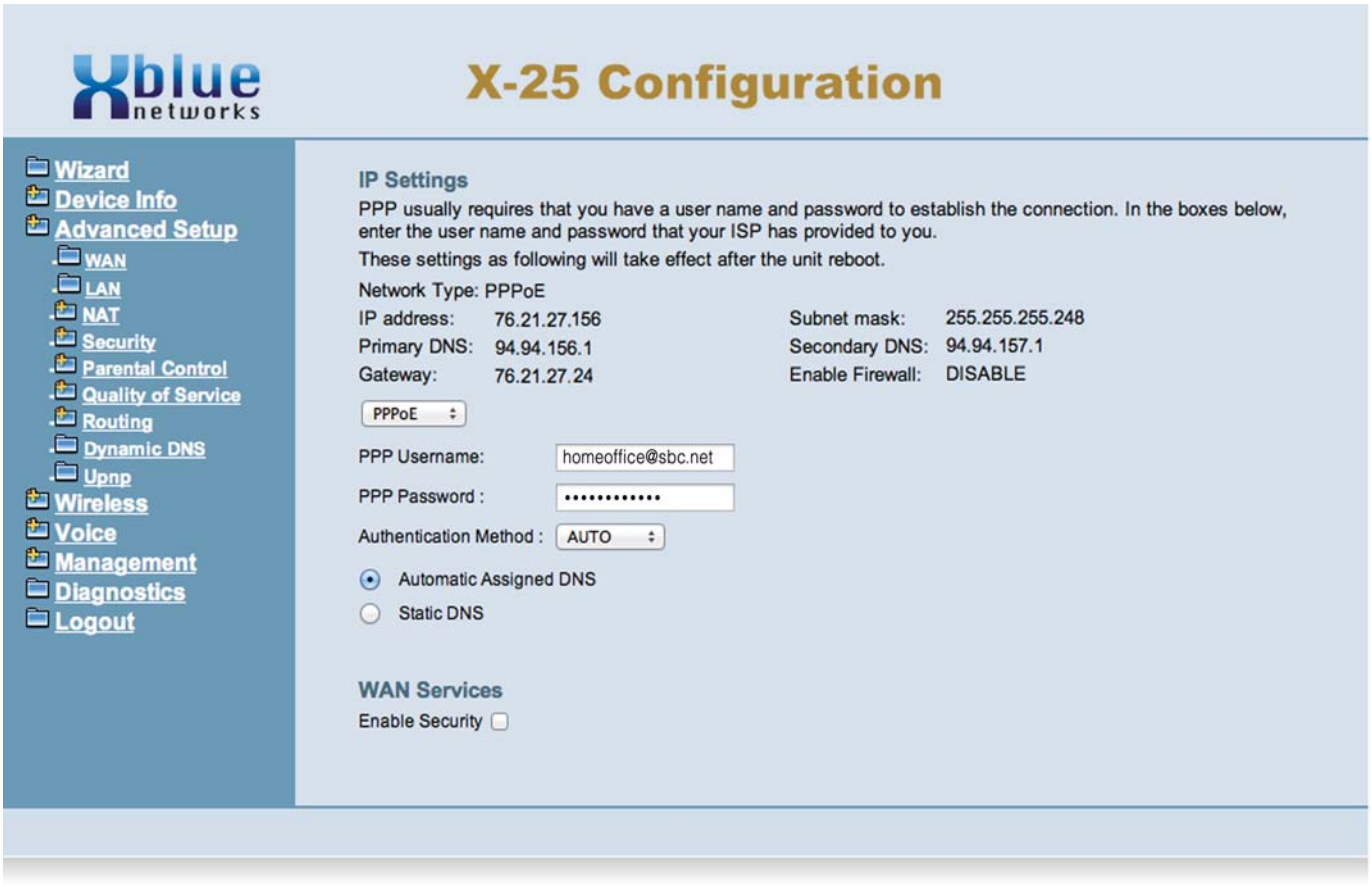
In this example, the WAN port is being connected to your existing network.



“Advanced Setup”

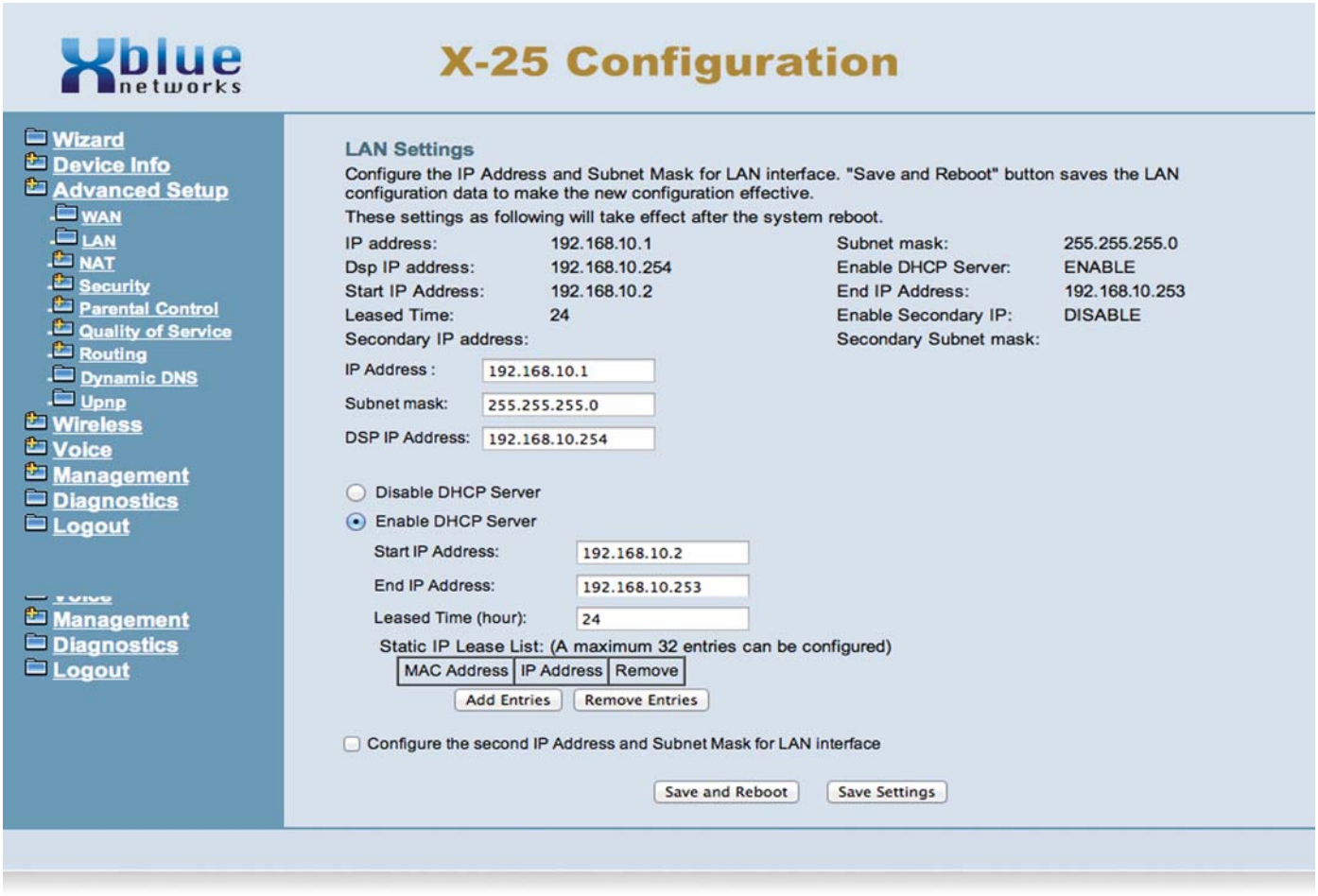
PPPoE

You may need to authenticate to your ISP with a user name and Password, which is known as Point-to-Point over Ethernet (PPPoE). In this case, using the drop down menu, you will select PPPoE, and enter the Information provided to you by your ISP. Other information, such as IP and DNS addresses will automatically be downloaded to your system.



Local Area Network

At default, the LAN is set as a DHCP Server and will automatically assign an IP address of 192.168.10.x to any device connected to the LAN port. The DSP IP Address - must be unique! If there are any conflicts, with this IP Address, the system will not function correctly.



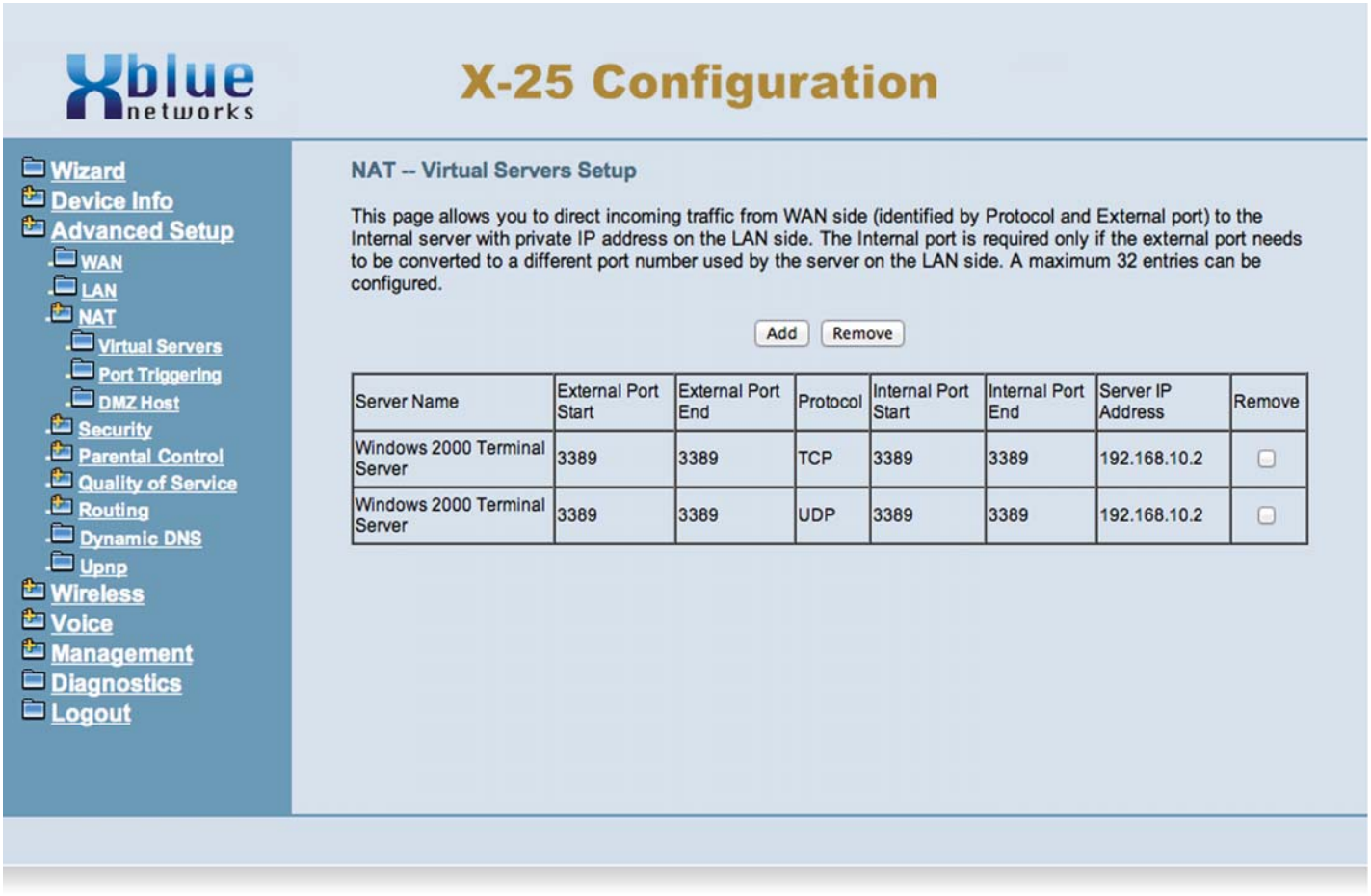
“Advanced Setup”

Network Address Translation

Network Address Translation (NAT) is designed to allow external devices access the internal devices located on your Local Area Network (LAN). In addition, it is used to “punch holes” in the Firewall, if it is Enabled. The system uses three different types of NAT, Virtual Server, Port Triggering and DMZ.

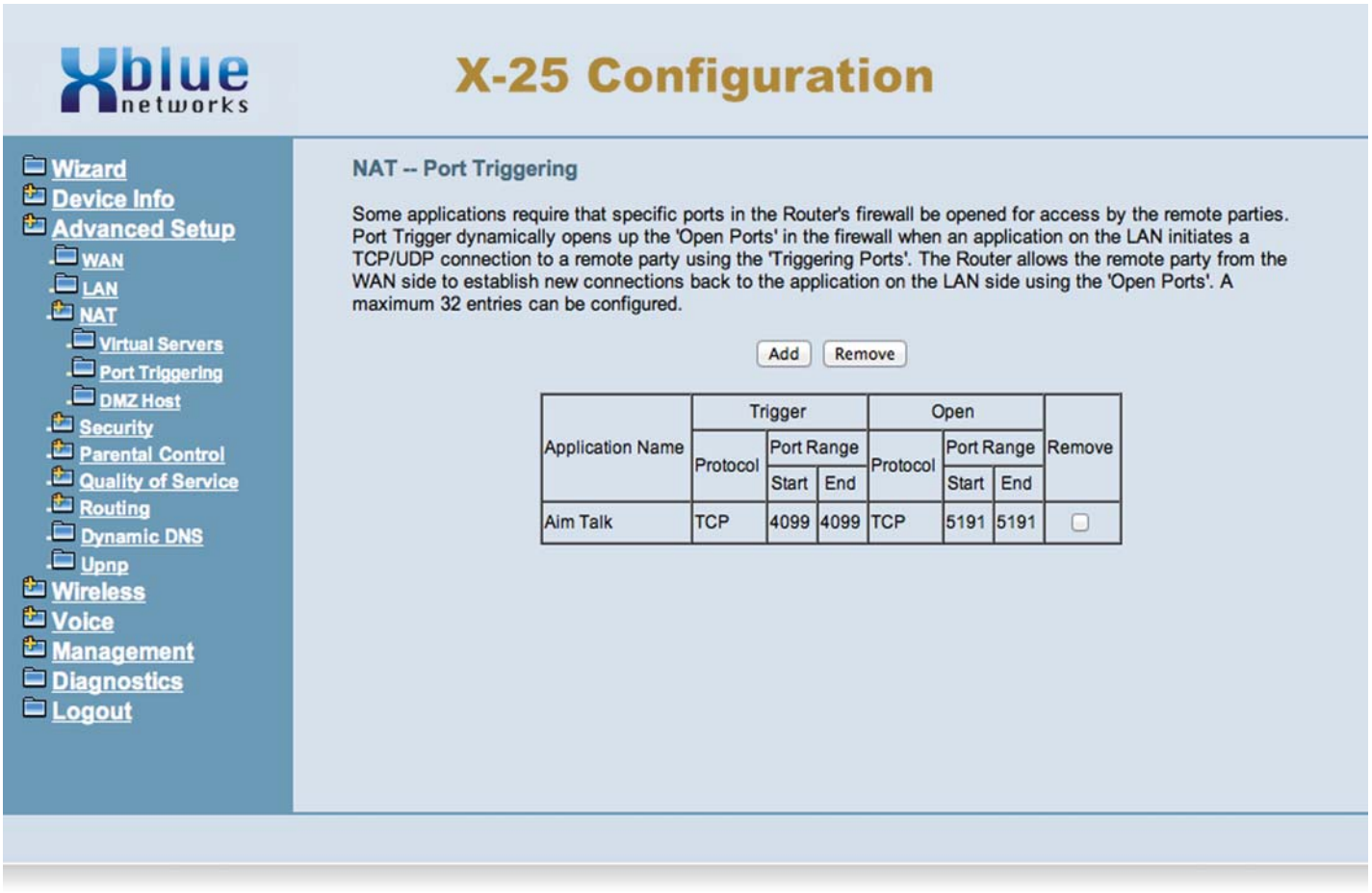
Virtual Server

Allows you to point an external (Class A or B) address directly to an internal (Class C) IP address. This allows a remote user to enter an external IP Address such as 91.29.62.177, and directly access the internal address 192.168.10.2. This is very important when remote users are trying to access an internal server.

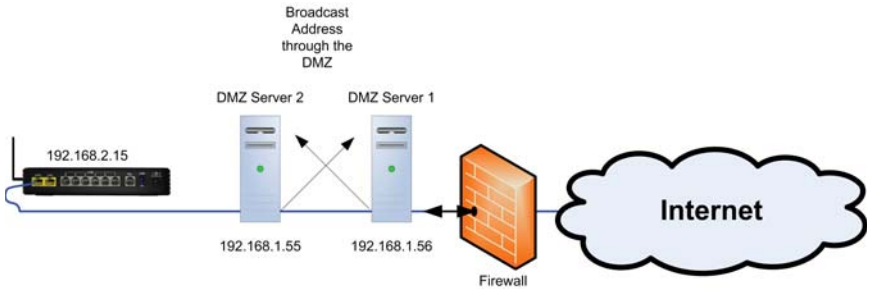


Port Triggering

Port Triggering allows you to grant one or more ports access, called Punching a hole, through the Firewall. The Firewall’s job is to block unauthorized access to your network. In addition, some applications, such as AOL aim, uses one port while being processed over the Internet, but a different one while on the LAN.



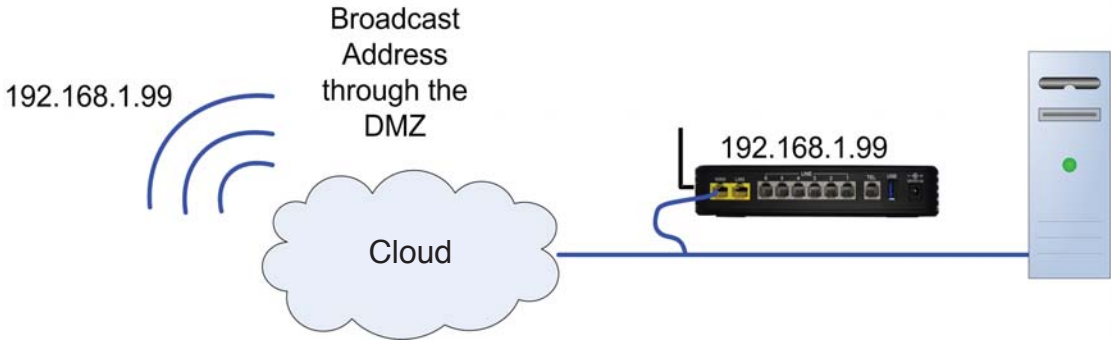
DeMilitarized Zone - known as a DMZ, allows an internal device, such as a client computer, to be seen on the Internet. Basically, information from the WAN (outside) is sent to a server with a firewall, which evaluates the information. If the information is valid, it is then sent to another server with another firewall for further evaluation. Although, these two servers are physically within a LAN, they are actually programmed to exist in front of the LAN to ensure no unwanted packets are transmitted into the LAN.



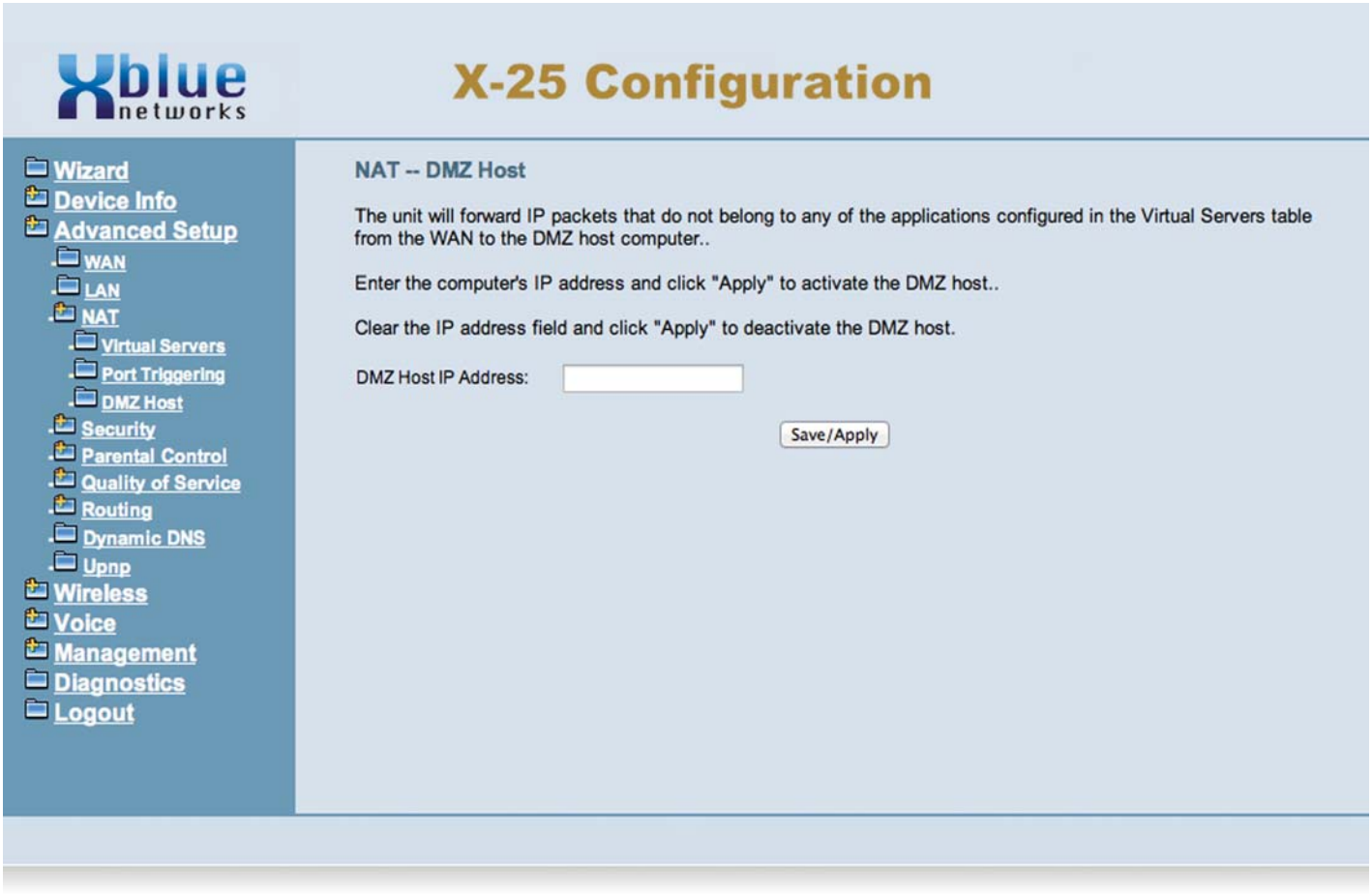
Notes:

Placing a server or gateway in the “DMZ” may open the system or network to malicious attacks

However, the most common use for the “DMZ” is to systemically place a server or gateway directly onto the Internet without requiring a class “A or B” address.



Simply enter the IP address of the internal device that you would like to appear as though it were directly on the Internet.



“Advanced Setup”

Security

Security, not to be confused with “Wireless Security” (for wireless security see page 77), is used to block incoming and outgoing IP addresses as well as a “Parental Control” settings.

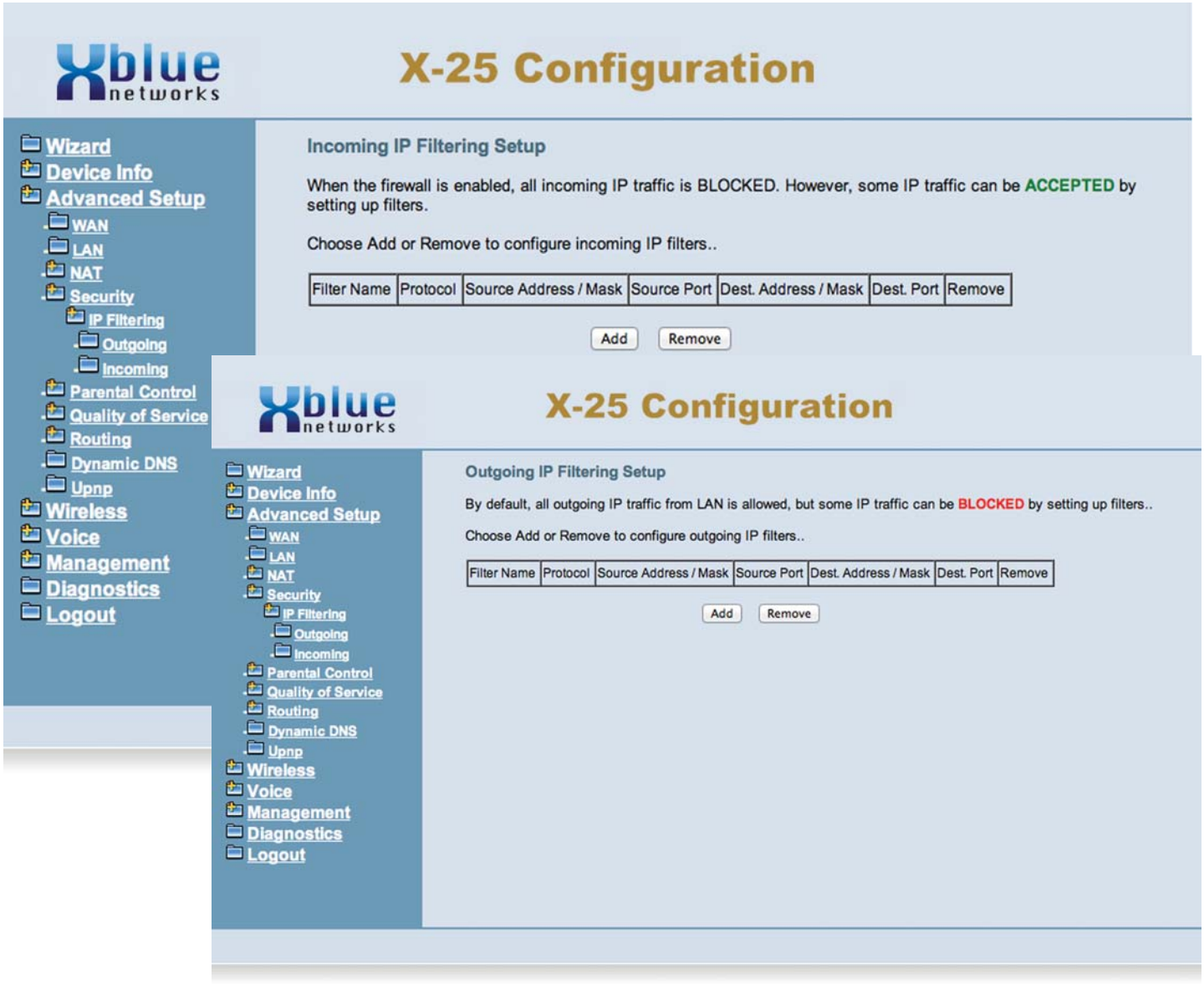
Incoming and outgoing filters are used to direct specific packets to the programmed location based on a set of parameters. This type of filtering is commonly used with games and facilitate the movement of IP packets.

Incoming IP Filtering

Enter any incoming IP address that should be blocked in the Incoming IP Filtering page.

Outgoing IP Filter

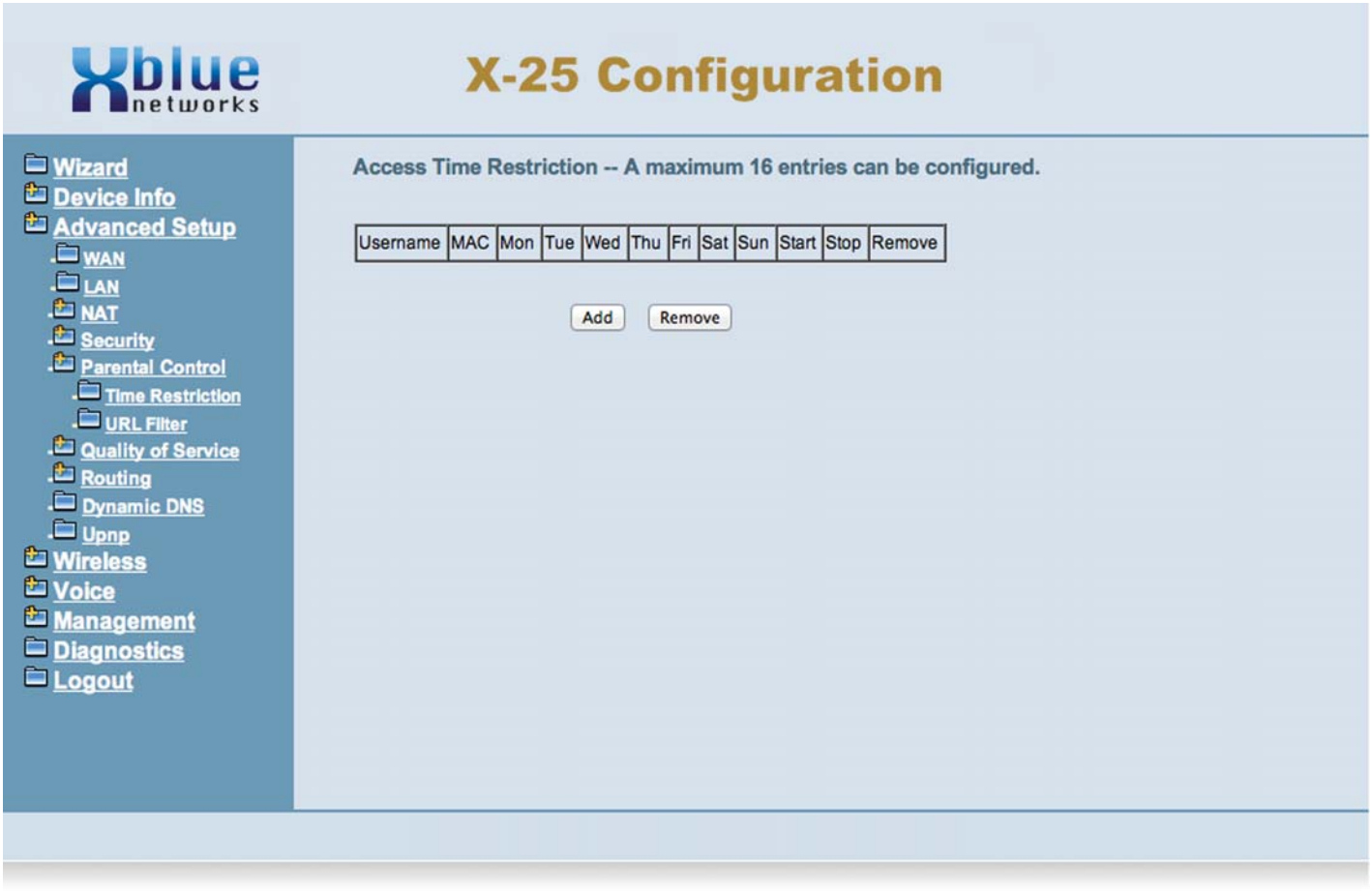
Any information coming in from the entered IP Address or URL will be blocked from coming into your network.



Parental Control

Also, know as Administration Control, this feature allows you to identify specific devices to allow or deny access to the Internet. There are two areas of Parental Control, Time Restrictions, which limits the time of day and day of week that a device can access the Internet, and the other allows or denies specific Uniformed Resource Locator (URL) addresses, such as www.google.com..

Time Restriction - Using the device’s Media Access Control (MAC) address, you can block a device from accessing the Internet.

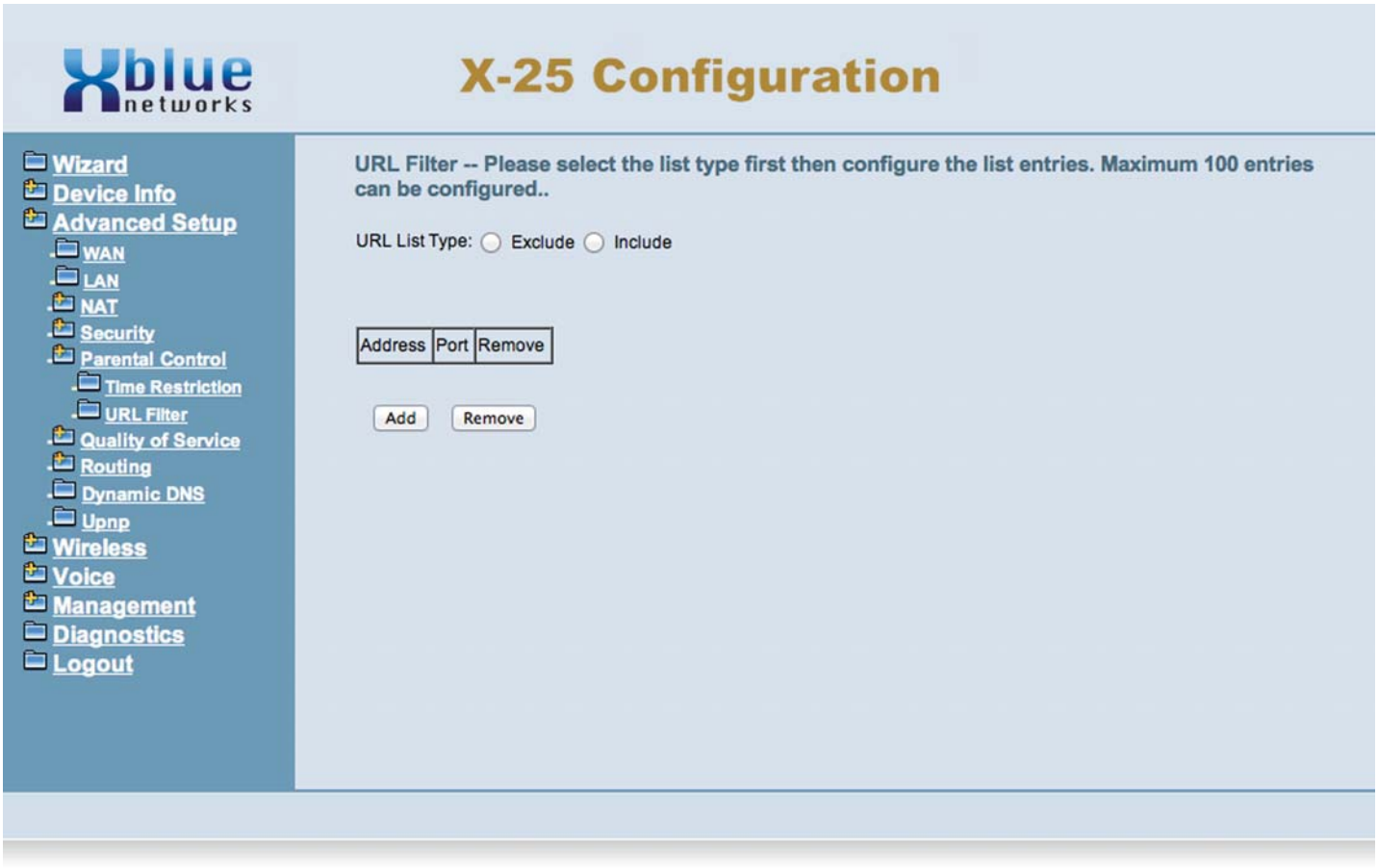


Notes:
Generally, a computer will have a label, usually on the bottom or back that shows the device’s MAC Address. A MAC Address consists of 6 octets and is written as xx:xx:xx:xx:xx:xx

“Advanced Setup”

URL Filter

You may block (Exclude) or allow (Include) up to 200 specific URL addresses. Any computing device on the LAN side will be governed by the rules of these two tables.



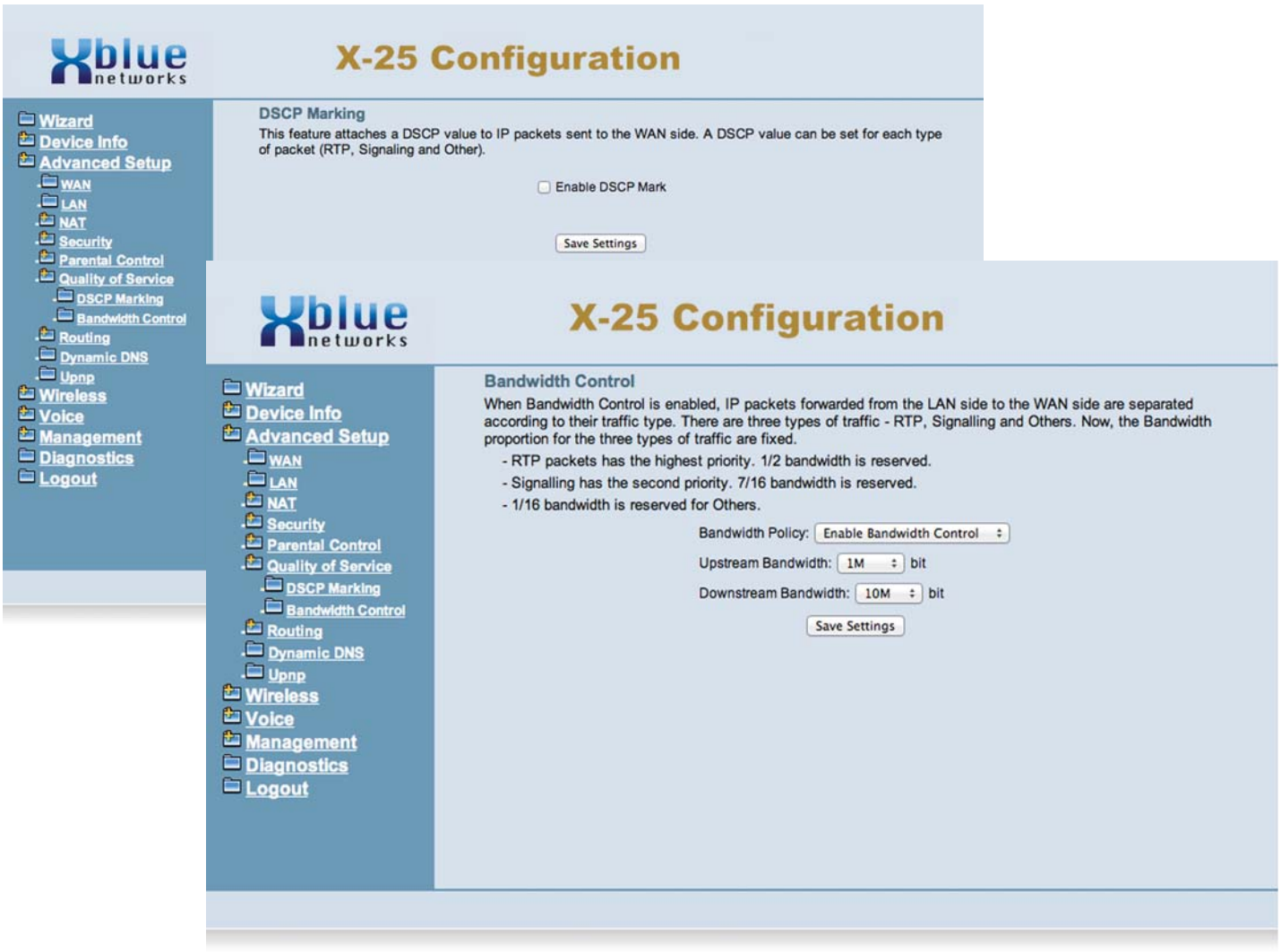
Notes:
There are 100 include, and 100 exclude entries, for a total of 200.

Quality of Service

Quality of Service (QoS) is a generic term used to represent the ability to prioritize specific IP packets, such as voice. Although, QoS is often used to improve voice quality there is no way to guarantee voice quality. As a general rule, voice quality is a function of the network; network devices, data integrity and sufficient bandwidth to handle both data and voice. Therefore, XBLUE Networks will do its best to help with voice quality but there is no guarantee, written or implied, that the quality of the voice network will be satisfactory, without changing network devices or upgrade available bandwidth, at the owner’s expense

DSCP (Differentiated Services Code Point) - when enabled, will give voice traffic priority over all other data traffic on your network. If disabled, all traffic will be considered the same.

DSCP Marking - Once enabled, you select the approximate bandwidth of your Internet (ISP) Connection. If your speed is not available, select the next lowest speed. For example, if your Internet connection speed is 2 meg upstream and 10 meg downstream, you will select 1 meg upstream and 10 meg downstream.



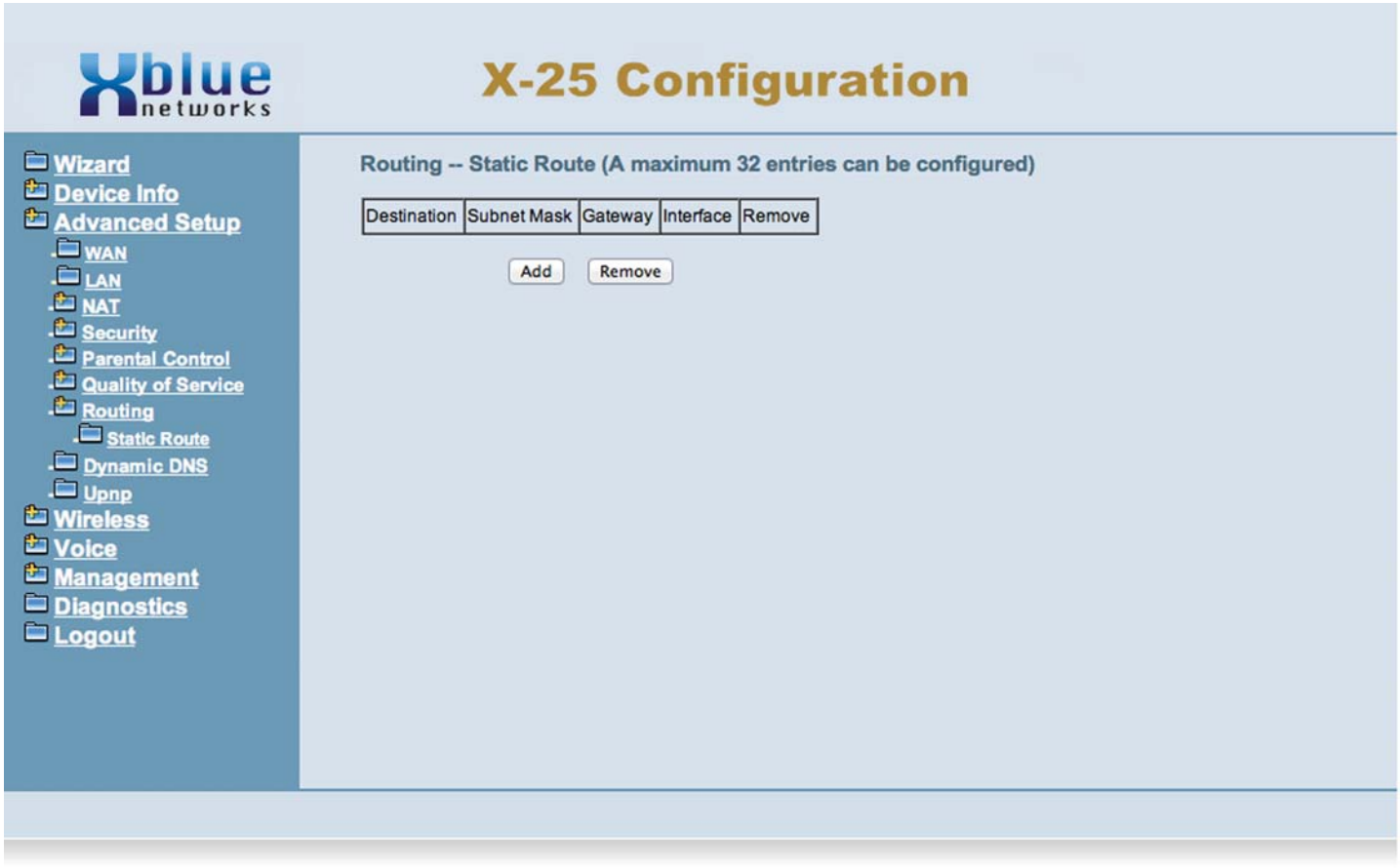
“Advanced Setup”

Routing

Routing, also know as Static Routing, is used to establish IP packet routing without requiring the devices to communicate with each other. This is considered a “No Fault” network, because there is no way for the network to recover in the event failure.

What does that say?

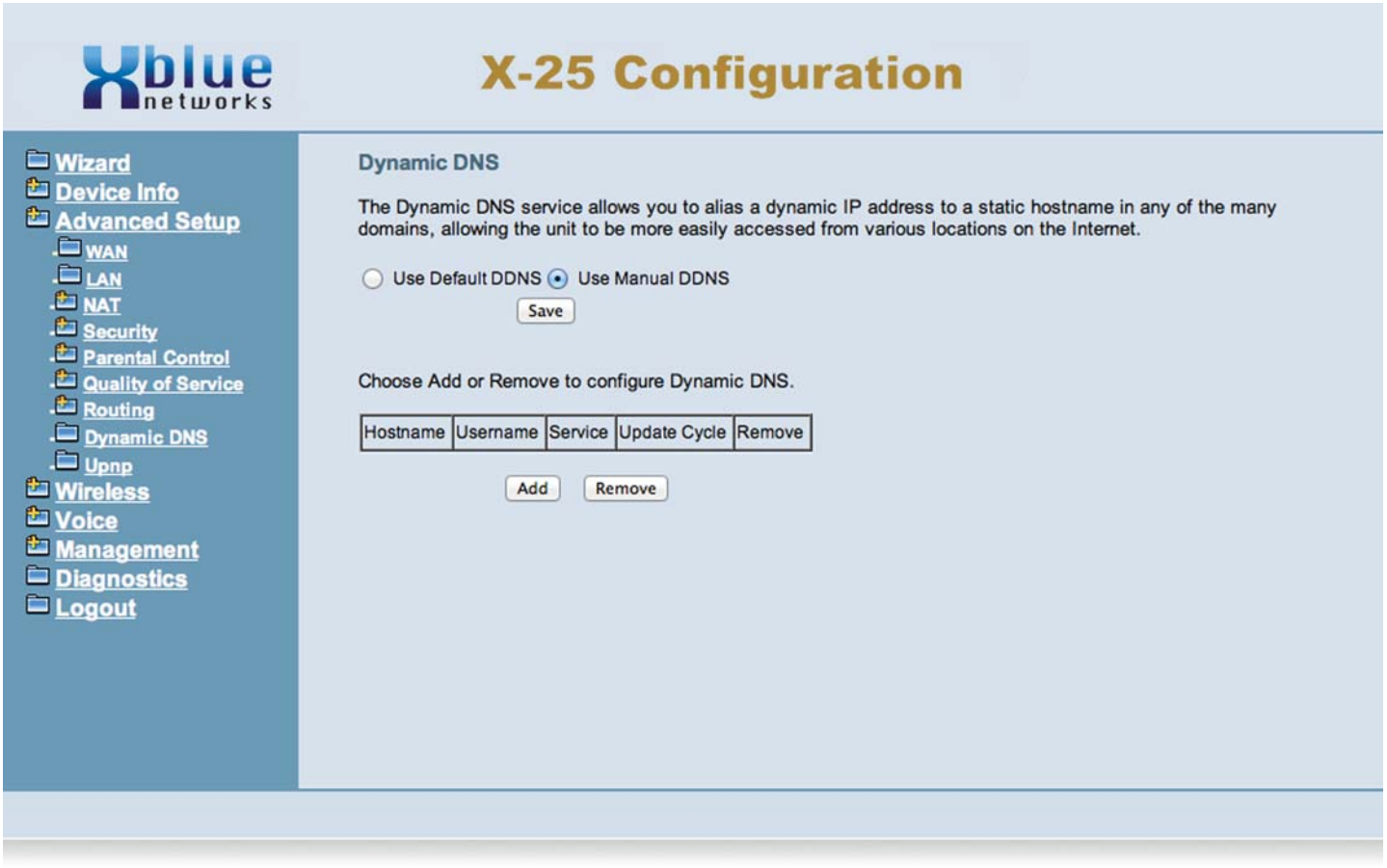
When you have more than one router on a network, you must “introduce” them to each other. For example, you may have 3 routers on your network, one for sales, support and accounting, and you want to keep the departments separate but you want all of them to have access to Internet. You will do this by “introducing” the routers to each other using static routing. In each router you will enter the IP address and subnet mask, of the other two routers, creating a chain of routers, allowing all of them to have access to the Internet.



Dynamic DNS

Unlike standard Domain Name System (DNS), Dynamic DNS (DDNS or DyDNS) does not require a static Class “A” or “B” IP Address. However, Dynamic DNS requires the device (server, gateway, router, etc.) to run a special software application that continuously identifies the individual unit to the remote DNS server, allowing the IP address to change without disrupting service.

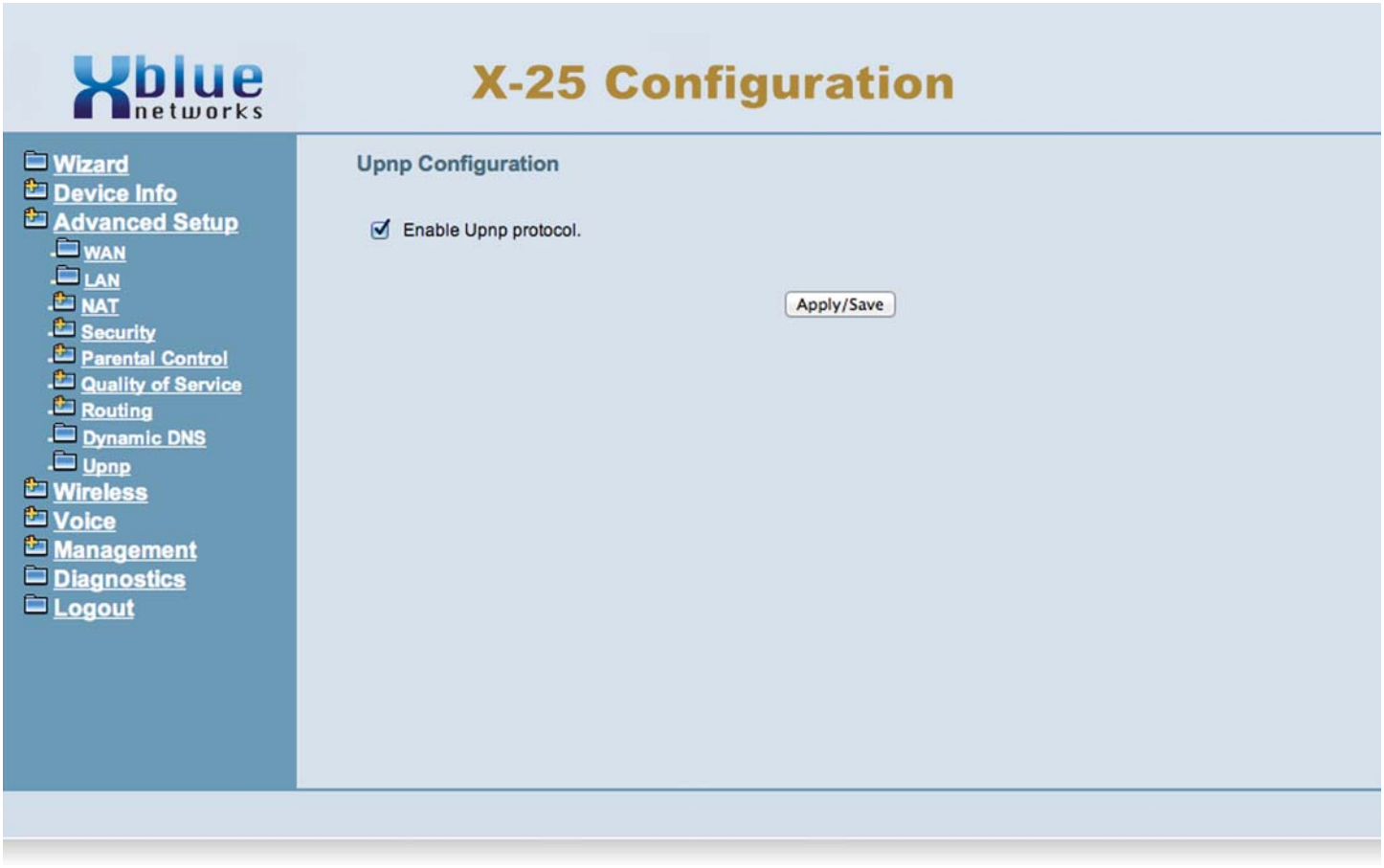
The X-25 is preprogrammed to use DyDNS’s paid service allowing you to use a non-static IP Address when connecting to the X-25 remotely and when using remote telephones.



“Advanced Setup”

Universal Plug and Play (UPnP)

Universal Plug and Play is a set of protocols created specifically to allow devices on a peer to peer network, generally using either TCP port 5000 or UDP port 1900, to connect seamlessly and simplify their implementation. Hoover over the square and click to enable UPnP.



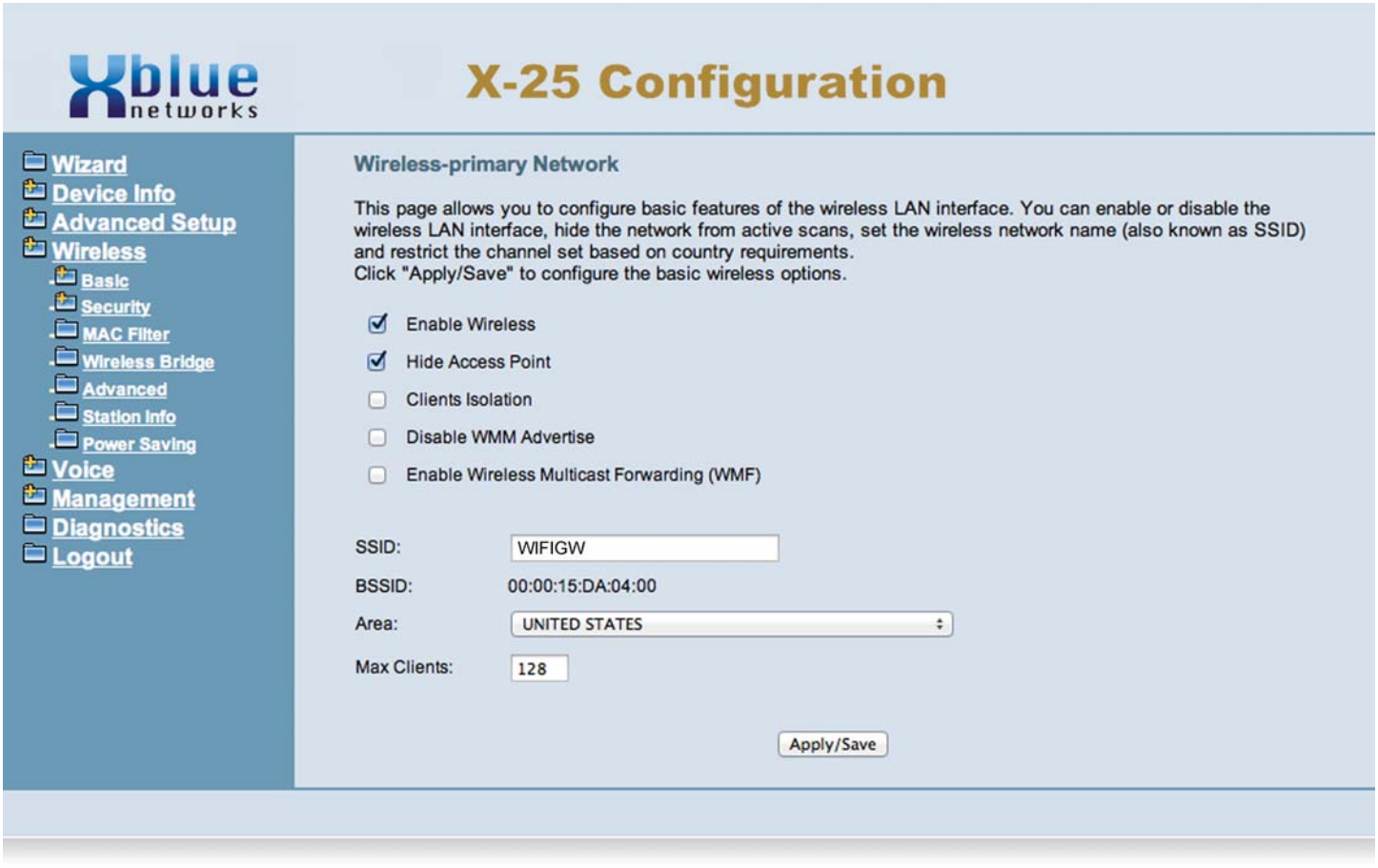
Wireless Local Area Network (WLAN)

There is an 802.11a, 802.11b, 802.11g and 802.11n wireless server build into the system. At default, the wireless interface is enabled, but unsecure. It is very important that security is enabled prior to going on line and although nothing is 100% safe against malicious network attack enabling security should minimize the effectiveness of any attacks. In addition, wireless security will stop unintended client devices from joining your network.

The system also has three Guest Accounts, also known as Hot Spots, which are only active when the primary network is enabled. The third is preprogrammed for XBLUE Networks' WiFi devices.

Because wireless networks broadcast their names, it is a good idea to use a name that is nondescript, and well secured. Whenever possible it is a good idea to stop the wireless broadcast of the SSID by checking "Hidden" on the wireless security page.

Primary Wireless Network

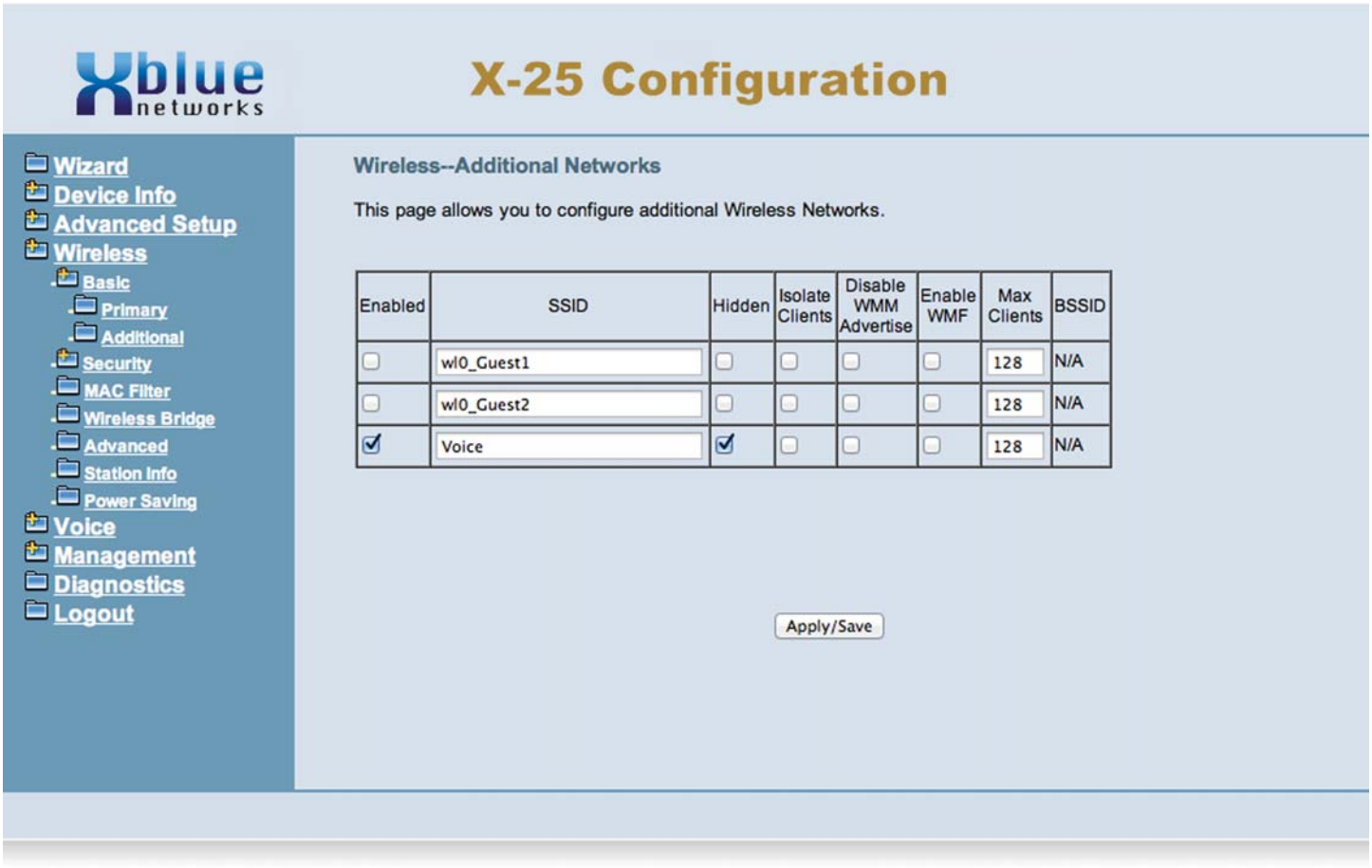


In this example, the primary wireless is enabled and it is named WIFIGW. However, because it is hidden, it will not be broadcast, so you must know the name or it cannot be found.

“Wireless”

Wireless - Additional Networks

Two of the three guest accounts are disabled, but can be quickly enabled by clicking in the check box. The third is preprogramamed for XBLUE Networks Wireless devices.

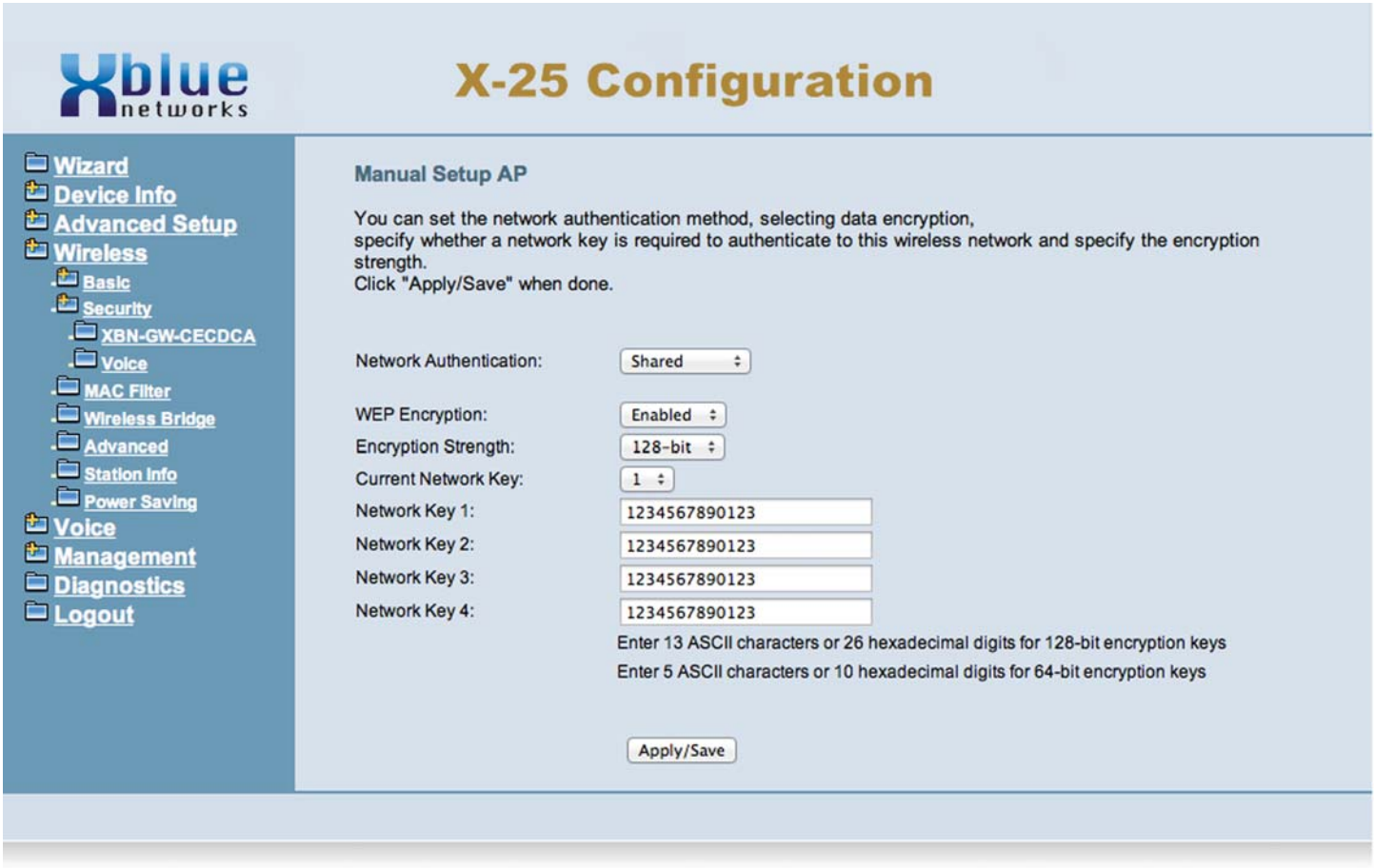


Note: If the Primary wireless is disable, all of the guest hot-spots will also be disabled.

Wireless Security

A wireless access point can be very convenient but it can also be very dangerous because it opens the network to unauthorized user access. It cannot be stressed enough how important it is that every wireless access point must have some type of security enabled, even if the system is not broadcasting its SSID.

If you are connecting the system to your existing network that already has wireless you may want to disable the WLAN completely. The XBLUE Networks Universal Wireless Adapters can be reprogrammed to connect to your current wireless network, or to make it even easier, you could reprogram your router to match the third wireless guest position.

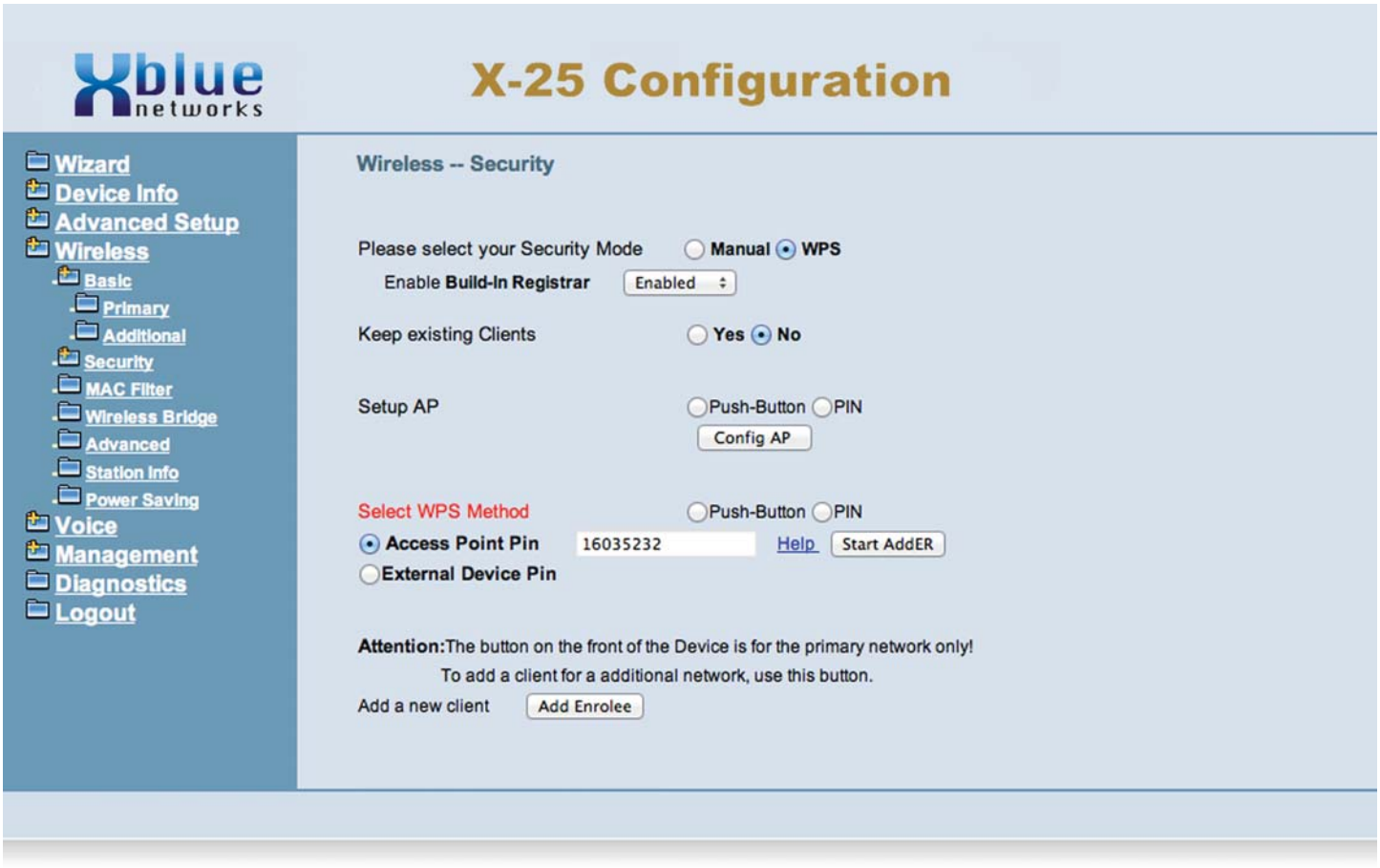


“Wireless”

WiFi Protected Setup (WPS)

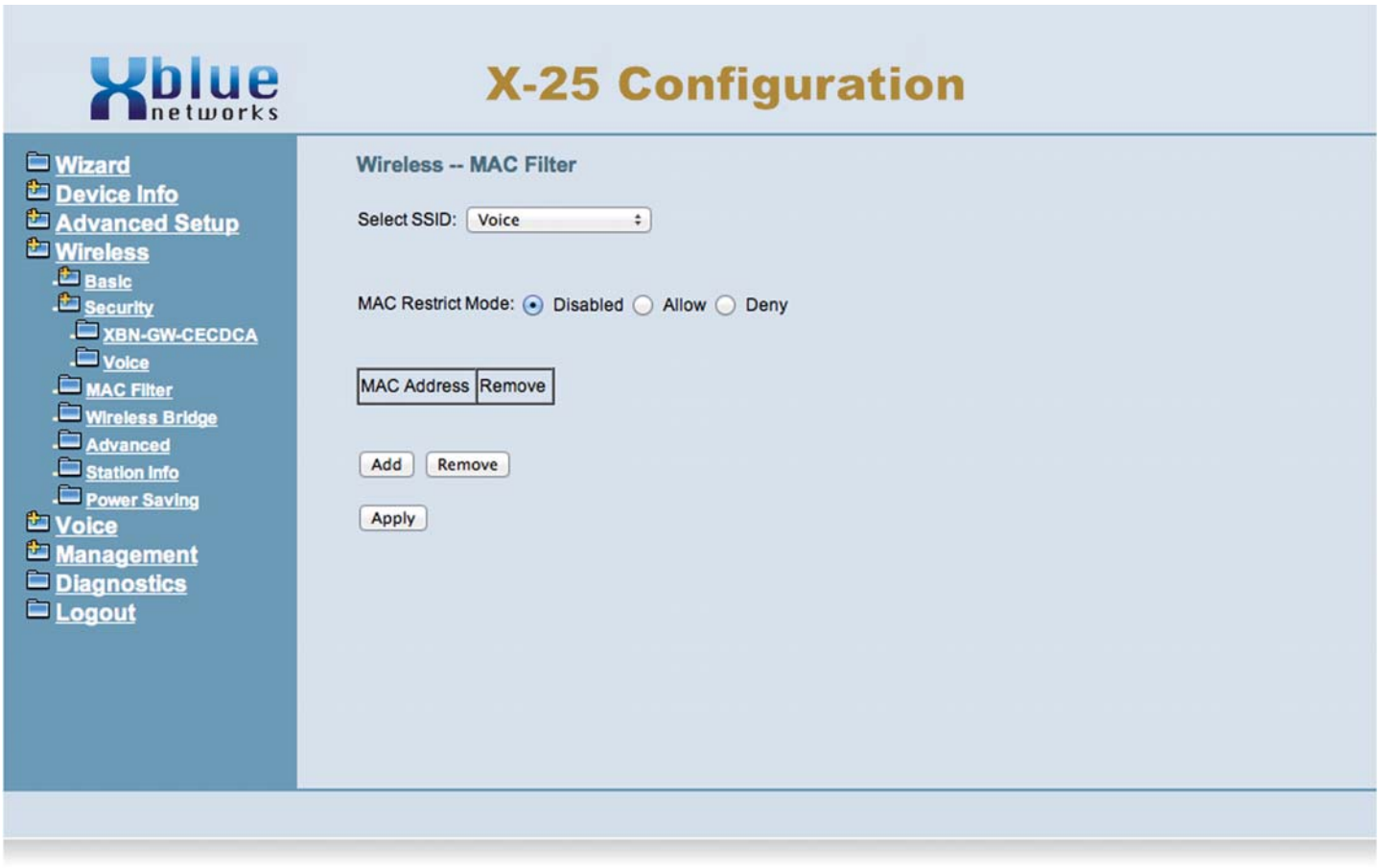
The system comes with WiFi Protected Setup (WPS), which like Bluetooth, requires the device to be paired with the system. Once paired, the two devices will automatically reregister each time the two devices are in the same location.

To begin registering your device press the button at the top of the system. Then on your device locate and enable WPS. The two devices will locate each other and your device should open and ask for a password. Enter the default or your personal WPS Password, and the two devices will be connected. No other programming required.



Wireless - MAC Filtering

The system also allows you to further secure your Wireless LAN using MAC Filtering. You can enter only the allowed devices, or you can deny specific devices.



Notes:

Locating a device’s MAC Address:

Usually, the MAC Address can be found on a label, which is affixed to the outside of the device, and should be labeled “MAC Address. However, some times it is called something different such as “Physical, Hardware or Device Address” but in all cases the MAC Address consists of 6 octets, which is 12 alphanumeric characters, and should be written as xx:xx:xx:xx:xx:xx. If you cannot find the MAC Address anywhere else, it should be on a label on the Printed Circuit Board (PCB) that connects your device to the Network.

A computer’s MAC address is easily found by going to the Command Prompt, which can be found in Windows XP by going to “Start --> Accessories --> Run” and then type CMD, and press enter. In Windows 7, you will press the start button and in the search bar type “CMD” and in Windows 8, from the tile page, just type “CMD”.

Once in the Command page type [ipconfig /all] and press enter. The MAC address will be shown as xx-xx-xx-xx-xx-xx.

“Wireless”

Wireless Bridge

The system can be set as an Access Point or a Wireless Bridge. A wireless access point allows other devices to access the wireless network. Whereas a Wireless Bridge, bridges two wireless sections of a network and also allows wired access to both sides of the connection.

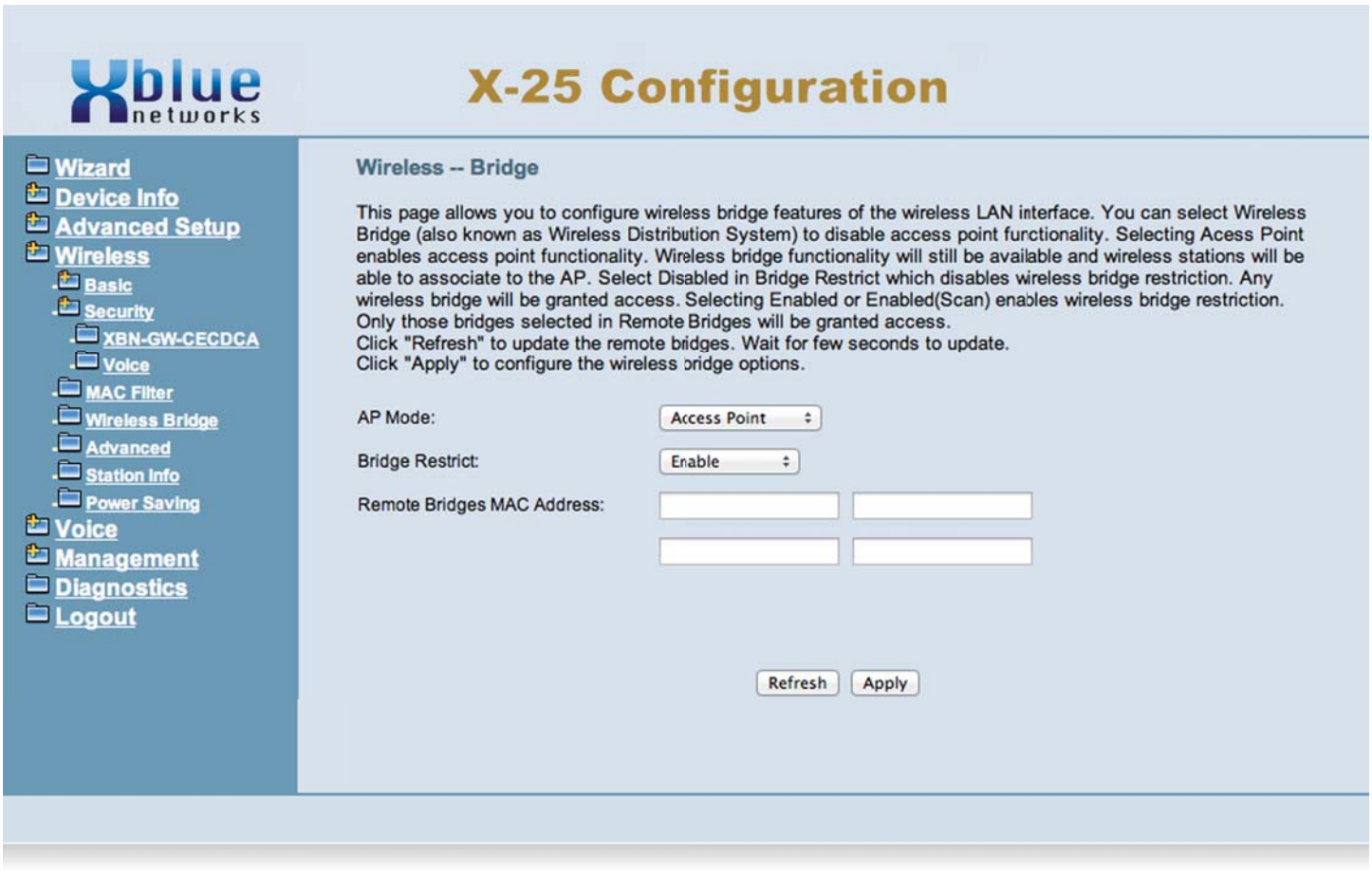
What does that say?

A wireless bridge allows a network to be “Extended” wirelessly, and converts the wireless signal to a wired one. In the example below, one system is in the office area and another in the warehouse area but there is no cable connecting them together, it is all done wirelessly. A wireless bridge as seen below, can connect the two devices creating one network, that is bridged together.

A Wireless Access Point can also be used to extend your network, but it usually supports a single client device such as a computer or a telephone.

The Wireless Bridge

At default, the system is set to access point.

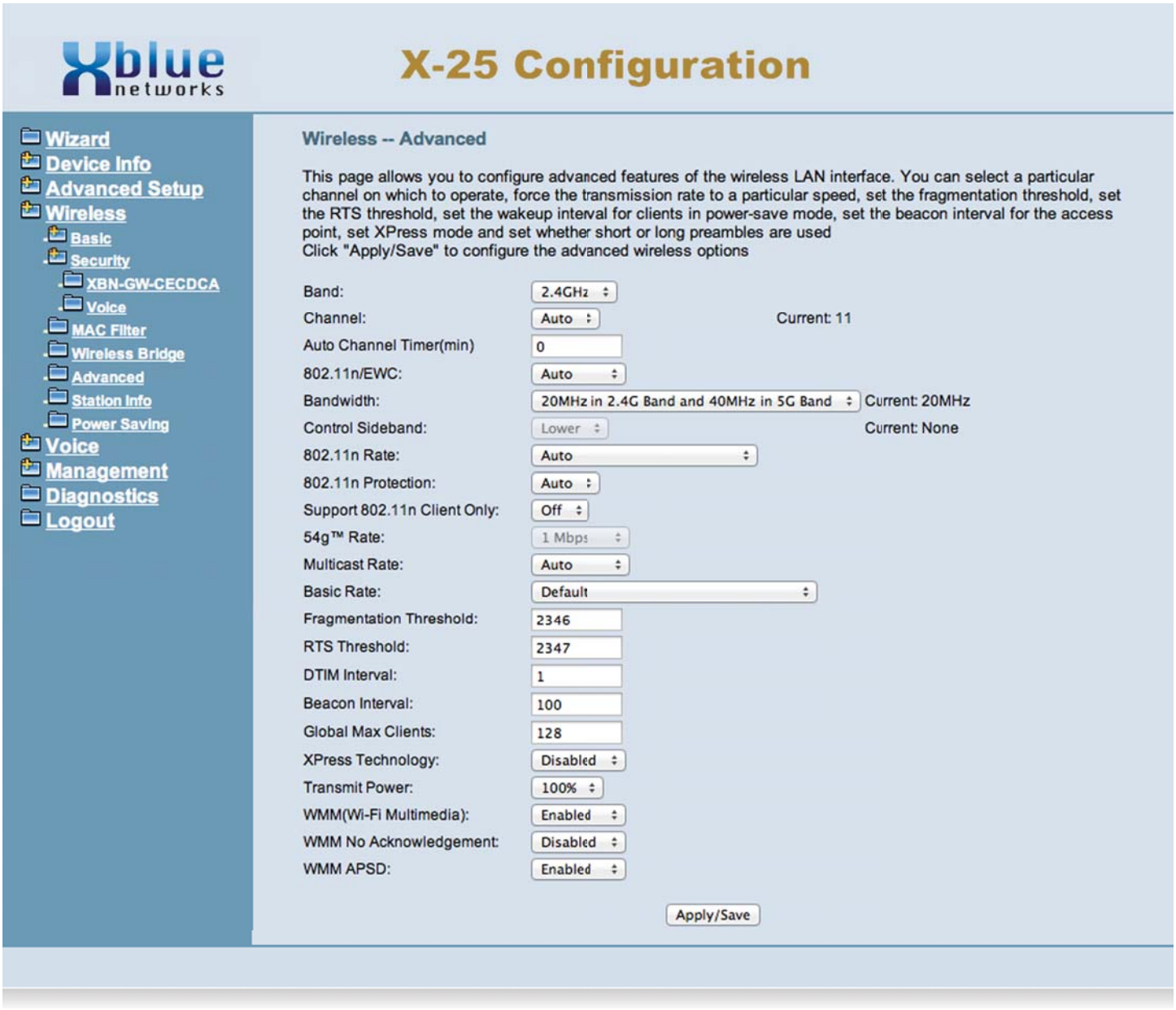


Unless you are using it as a wireless bridge, this parameter should remain set to Access Point.

“Wireless”

Wireless Advanced

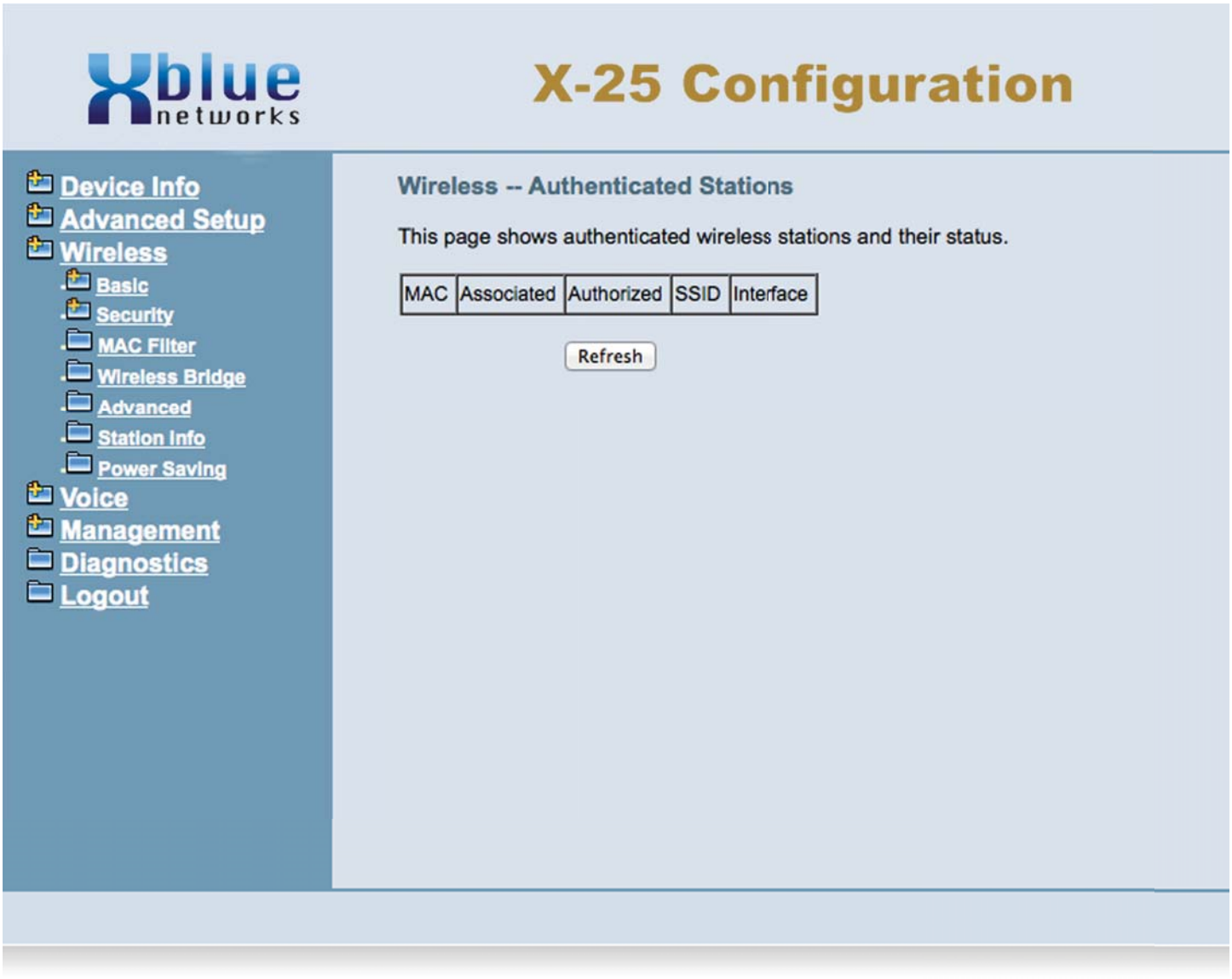
The system is set up to accommodate the most common settings in the United States. Generally these settings will not need to be changed.



Note: Changing these settings may cause erratic operation. Only change these settings if you are instructed to by XBLUE Networks technical support or other networking professional.

Station Info

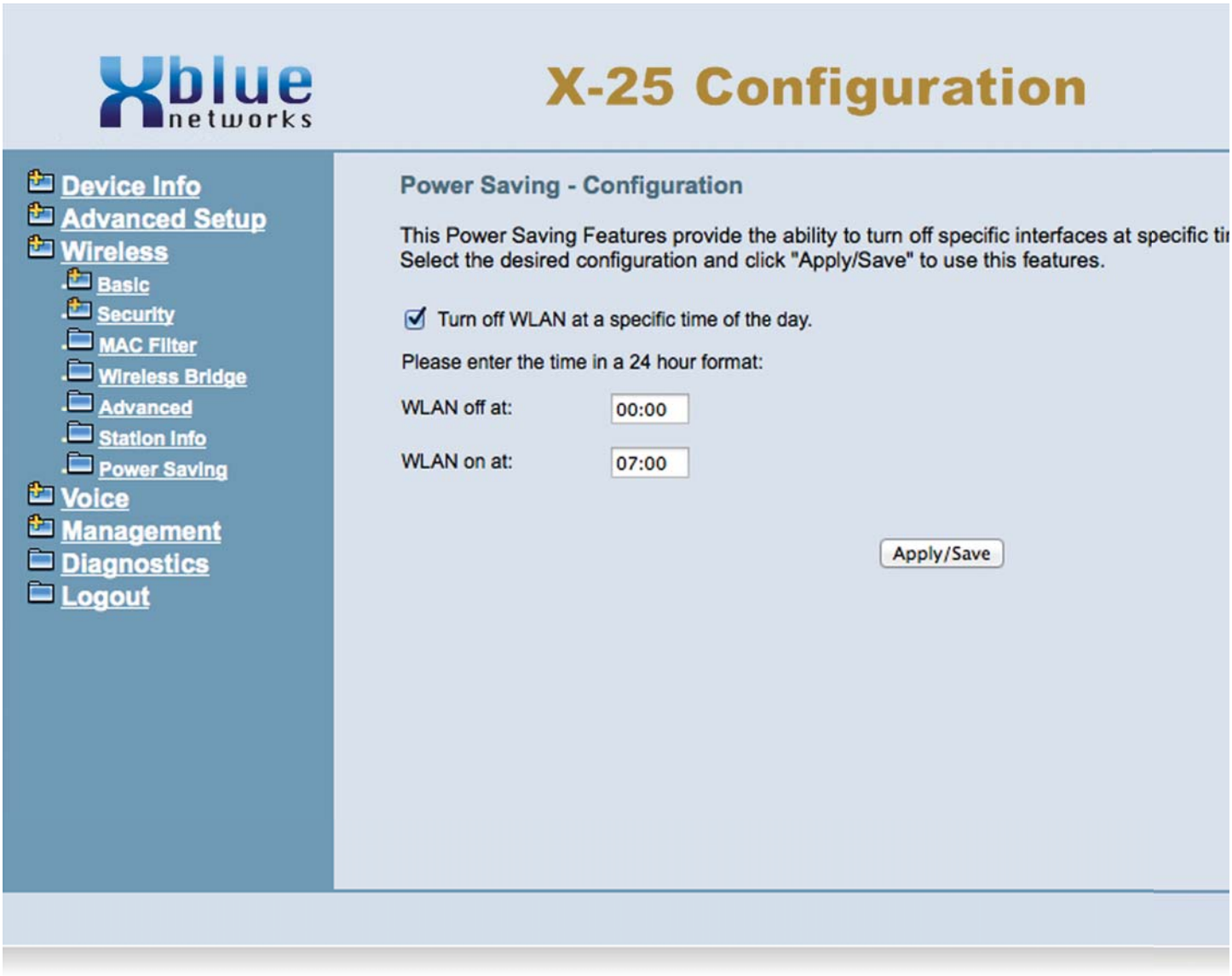
Station Info is a reference only page that shows any authenticated wireless clients and their status.



“Wireless”

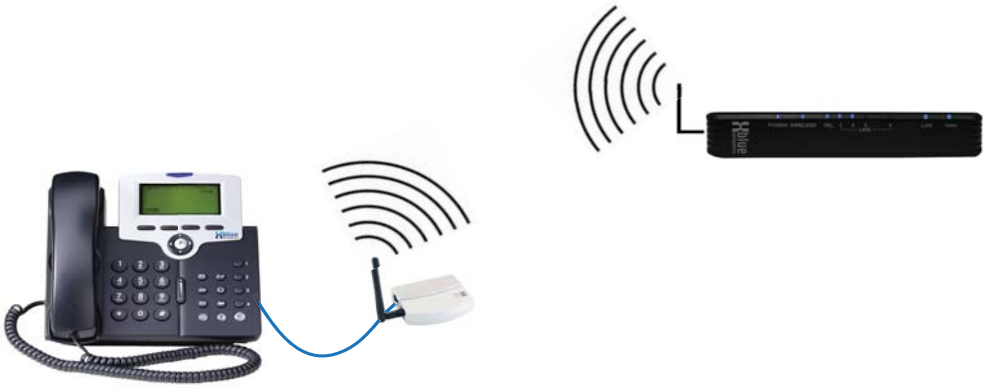
Power Saving

The Power Saving feature gives you the ability to automatically enable and disable the Wireless LAN once in a 24 hour period of time.



XBLUE Universal WiFi Adapter

Because there is not always an Ethernet port where you want to put your telephone, XBLUE Suggests their Universal WiFi Adapter, which will automatically connect to your X-25 system and does not require additional programming.



Note:
The quality of your wireless connection may affect the quality of the voice connection. There is no guarantee, written or implied, that the XBLUE Wireless adapter will work 100 percent of the time.

Notes:

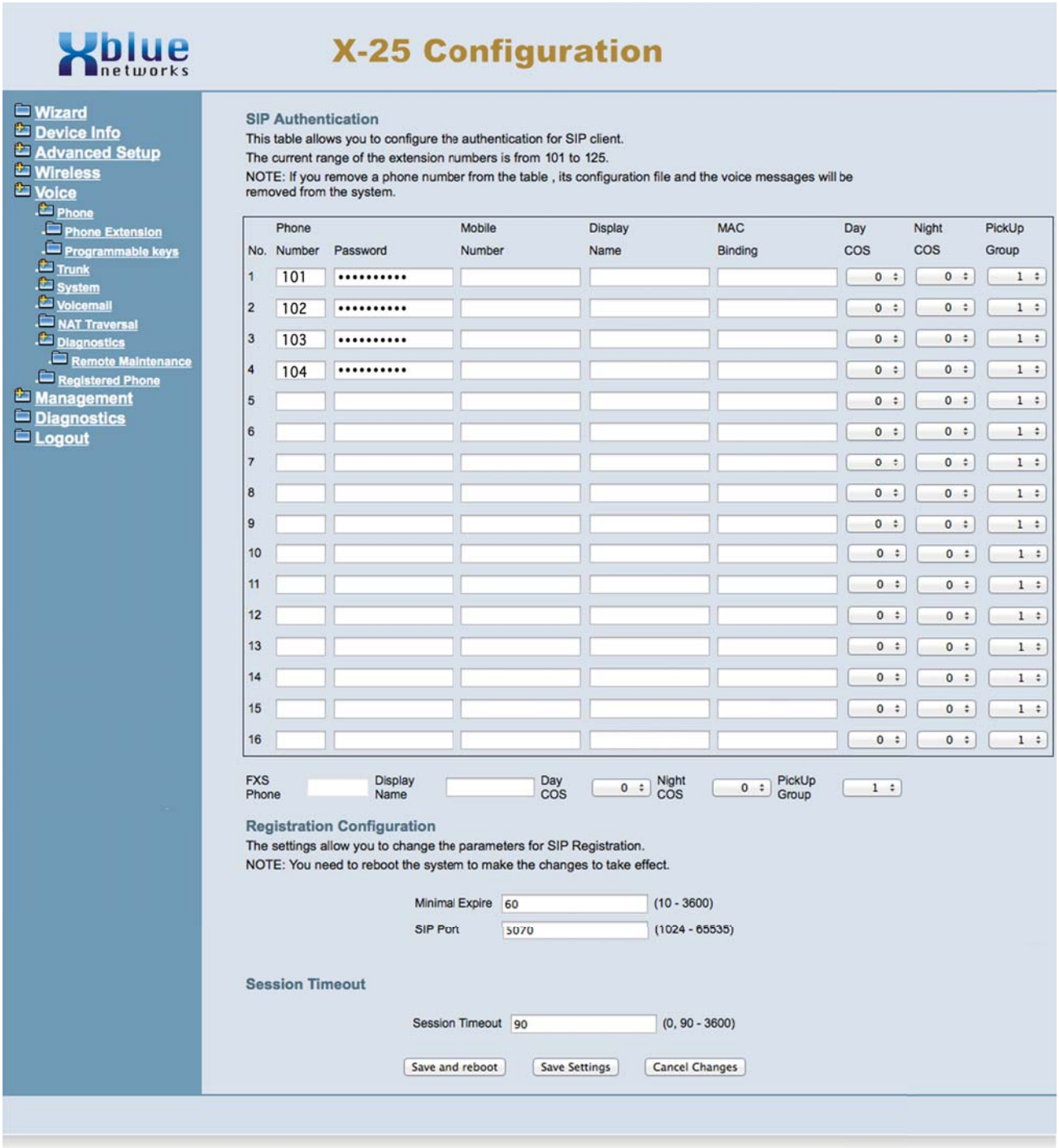
Voice

The Voice area of programming is used to establish the system numbering plan, dial codes, service mode, answering position, call routing and restriction and other telephone system parameters. There are seven programmable parameters within the Voice programming directory; Phone, Trunk, System, Voicemail, NAT Transversal, Diagnostics and Registered Phone, which makes up most of the telephone system parameters.

Phone

Phone Extension

The System will automatically authenticate each **X-2020** telephone using the numbers from the “Numbering Plan”. The default extension numbering is 101 - 116. You have the option of manually entering the extension numbers and passwords. You may also associate your mobile phone with your extension number.



Phone Number

The **X-2020** telephones will automatically authenticate with the **X**-25 system. Once authenticated, the **X-2020** telephones will be assigned an extension number, based off the system’s numbering plan. The default extension numbers are between 101 and 116. Each extension will be assigned a unique, random ten digit password. In addition, to further secure your system the telephone’s MAC address will also be associated with the telephone’s extension and password.

Mobile Number

You can associate your mobile telephone number with your desktop telephone. Enter your mobile number exactly the way that you would dial it, if you were in the office dialing the number. For example, if you normally dial seven digits 555-1212, then that is what you would enter, if you normally dial 913-555-1212, then that is what you would enter.

Display Name

The display name will be referenced after the telephone is authenticated. This is used with the **X**-25 soft telephone

MAC Binding

The **X**-25 system uses the telephone’s MAC address to ensure that the correct device is registered and authorized to use the system’s resources. If a device tries to authenticate, even with a valid extension number and password and the MAC Address does not match, the authorization is denied.

Note: If you want to change a telephone’s extension number, on an existing telephone, you must delete the existing extension information on both the existing and the new extension number.

Class of Service

Each extension is assigned a day and a night Class of Service, which is used to reference the dialing privileges for each extension. This allows you to assign different dialing privileges to each extension based off the time of day. This can help eliminate unauthorized toll charges.

Day COS

The Day Class of Service (COS) is built using the rules entered in the Call Restriction Table (see Voice --> Trunk --> Call Restriction). When a telephone number is dialed, the extension’s COS is checked and the Call Restriction tables are referenced. If the call is allows, the call is placed, otherwise, the call is denied.

Night COS

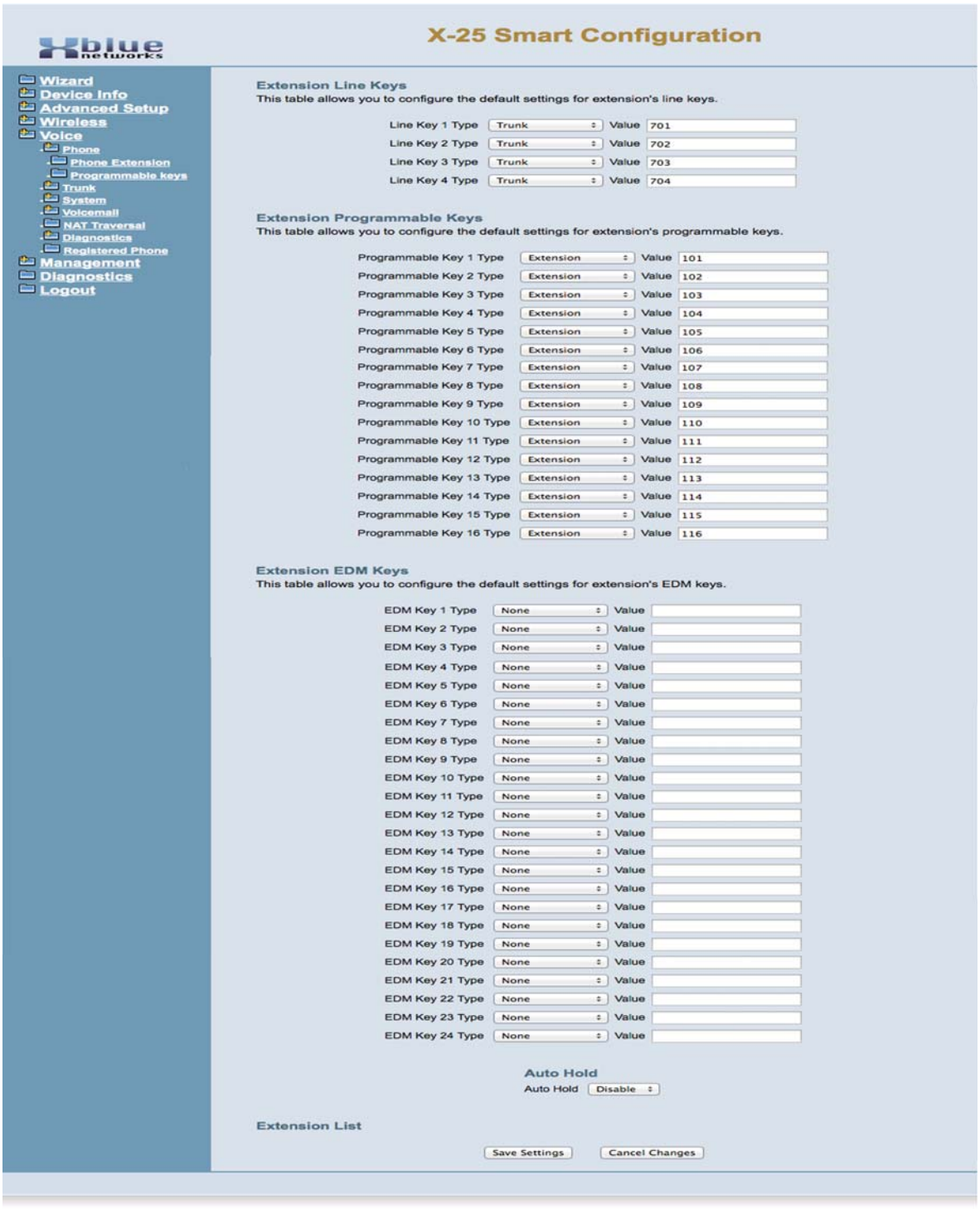
The Night Class of Service (COS) is built using the rules entered in the Call Restriction Table (see Voice --> Trunk --> Call Restriction). When a telephone number is dialed, the extension’s COS is checked and the Call Restriction tables are referenced. If the call is allows, the call is placed, otherwise, the call is denied.

Pickup Group

All extensions within a pick up group will have the ability to pick up a ringing call form a different extensions. This can be very helpful when you are at a different extension and you hear your extension ringing. Just dial the Call Pickup code to intercept the ringing call.

The Keys on the **X-2020** Telephones can be reprogrammed using a standard Internet browser. These buttons can be programmed at each extension or you can "Push" (send the parameters to all extensions at the same time). (The 16 buttons referenced is for a future telephone) The four on the phone and the 24 on the Sidecar are currently used.

Each button can be programmed as: *None* - no action, *Extension* - for one touch dialing, *Trunk* - for one touch pickup and access, *Call Park* - to place calls on system hold, *Feature Key* - one button press to activate a feature, *Do Not Disturb* - Stop all calls form accessing your extension, *Live Record* - to record active calls, *Virtual Mailbox* - one button access to the programmed mailbox, and *Others*- allows you to program any number that you would like to access for one button dialing.

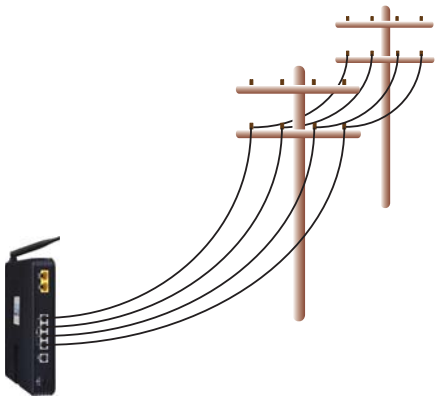


Trunk

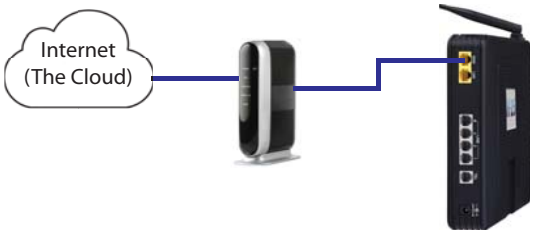
A trunk also known as a Telephone or Central Office (CO) Line, provides access to the telephone company, Public Switch Telephone Network (PSTN). The X-25 is equipped with four PSTN (POTS - Plain Old Telephone Service) ports which are analog lines that are usually connected to a traditional telephone line provider, such as home telephone Lines. In addition, the X-25 has the ability to authenticate up to four “Cloud” telephone lines, such as XBLUE Cloud’s low cost premium quality telephone lines, using Session Initiated Protocol (SIP) known as SIP Trunks.

What does that say?

Plain Old Telephone Lines which are analog telephone lines, known as Plain Old Telephone Service or POTS Lines. Each of these lines connect directly from the telephone line provider (telephone company) to your local system.



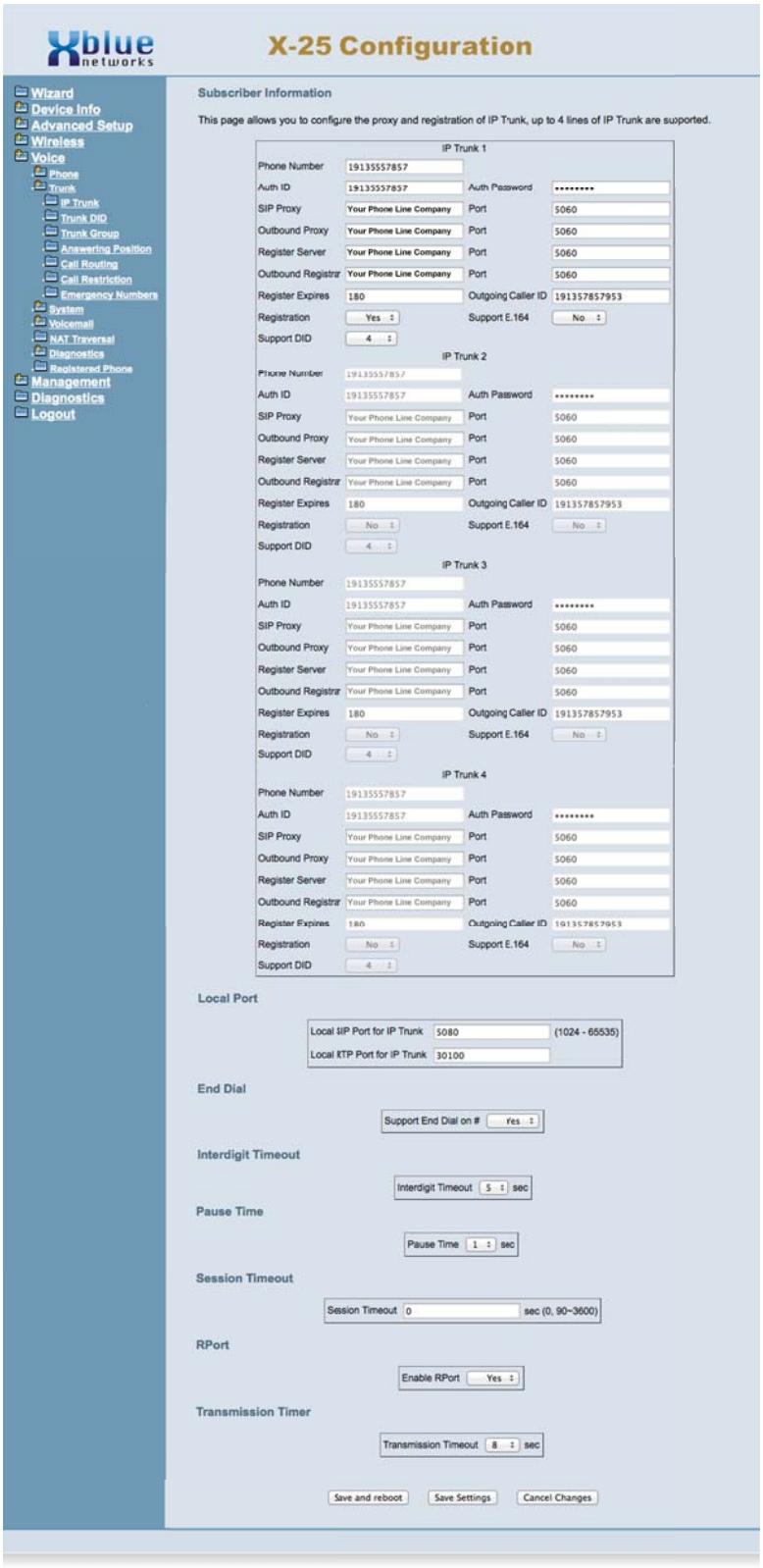
Unlike analog telephone lines, SIP Trunks (Cloud telephone lines) connect right over your broadband connection, and do not require a physical connection to the X-25 system. Each SIP Trunk is assigned a special authentication ID and Password, which authenticates and systemically connects them from the telephone line provider and your system. Once programmed, each telephone line can be programmed on a programmable button on your X-2020 telephone. Accessing one of these lines is as easy as pressing the button.



Because SIP Trunks are accessed through your broadband (Internet) connection it is important that there is enough bandwidth. Although each call will take approximately 200 Kilobytes, when combined with your existing data usage you will want to contact your Internet Service Provider (ISP) to ensure that your bandwidth is sufficient to handle both voice and data traffic. It is suggested that a minimum of 7 Megabytes down and 1 Megabytes up, known as 7 x 1 be used when using Cloud Telephone Lines. As a standard rule, for a small business with standard data usage, a 7 x 1 connection should be enough to support most voice and data traffic.

SIP Trunks (Telephone Lines)

The X-25 comes equipped to support four Cloud Telephone Lines known as "Trunks", and up to forty Private Lines, known as Direct Inward Dial (DID) numbers. Unlike standard PSTN lines these lines are not physically connected to your system they connect by authenticating over your broadband Internet connection. There are several SIP telephone line providers being sold on the market and the integration should be standardized. However, this may not always be the case, and although XBLUE Networks has done their best to integrate all providers' telephone lines, XBLUE Networks does not warrant or guarantee, written or implied, that every providers' telephone lines will work with the X-25 system.



The settings for your SIP Telephone Lines will be provided by your SIP Trunk Provider; please contact them to check on any adjustments that may be needed.

Phone Number - When authenticating your telephone lines, your provider may give you an actual 10 or 11 digit telephone number or it may be an account number. Generally, the account number and authorized ID are the same. You will also be given and password. These three parameters are used to authenticate your telephone lines.

Proxy Server is a "Go-Between" that makes requests on behalf of other clients. Its primary roll is a route packets the fastest way possible and enforced routing policies, even if it has to rewrite specific parts of the request before forwarding the packet.

Register Server sends a Registrar Server requests so that it will place vital information in a location for the Domain Server. Some SIP IP Trunk providers require that a Registrar Sever be reference in order to keep the connection working correctly.

Outbound Proxy is often used as a central location for security verification before connecting two devices. This is commonly used as an additional layer of security.

**** All of this information should be provided to you by your SIP Telephone Line provider.

Direct Inward Dialing

One feature that some SIP Telephone Line providers offer is the ability to use Direct Inward Dial (DID) numbers, often called "Private Lines". DID numbers are generally published direct telephone numbers that rings directly to a specific user's extension, bypassing the attendant and auto attendant. DIDs were once reserved for large companies who could buy hundreds of sequential telephone numbers, which were assigned to specific employees. SIP Telephone Line providers can now allow smaller companies to purchase a smaller quantity of numbers, even as few as one. However, not all SIP Telephone Line providers offer the DID feature so it is important to check before signing any contacts.

Note:
SIP Telephone Lines with DID assignments are not affected by the Answering Position assignment, found under Voice --> Trunk --> Answering Position.

When entering a new DID, make sure that the "Trunk Group" in the DID Table is set to all or matches the hunt group on the "Trunk Group" page.

Depending on your SIP IP Trunk provider and the X-25 system programming may restrict what Outgoing Caller ID can be sent. Ideally, if your DID rings directly to an extension, you can define the Outgoing Caller ID as the same number. If left blank, your companies main telephone number should be sent.

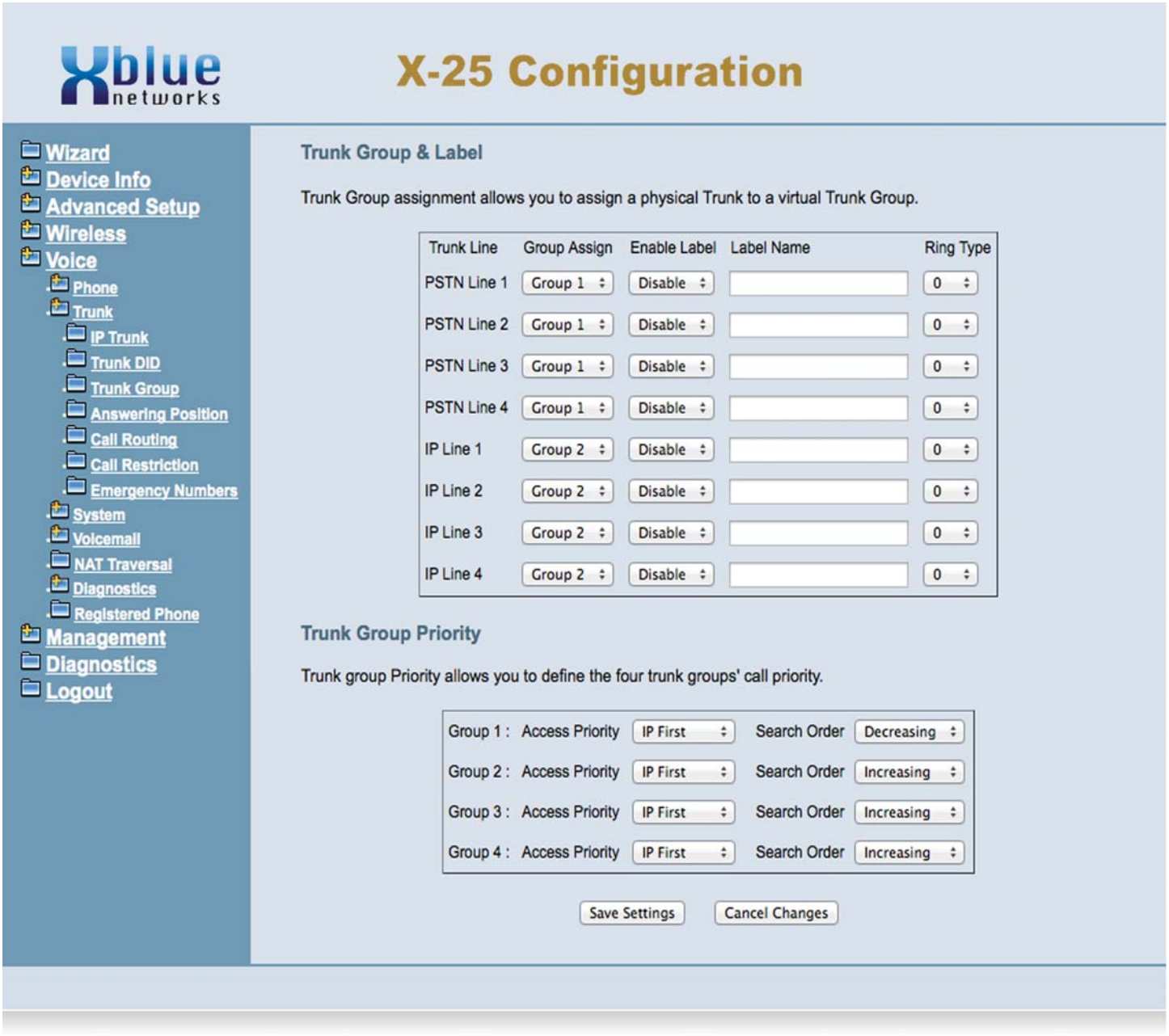
DID Table

No.	DID Number	Destination	Outgoing Call ID	Display Name	Trunk
1	19135557857	101			All
2					All
3					All
49					All
50					All

Save Settings Cancel Changes

Trunk Group

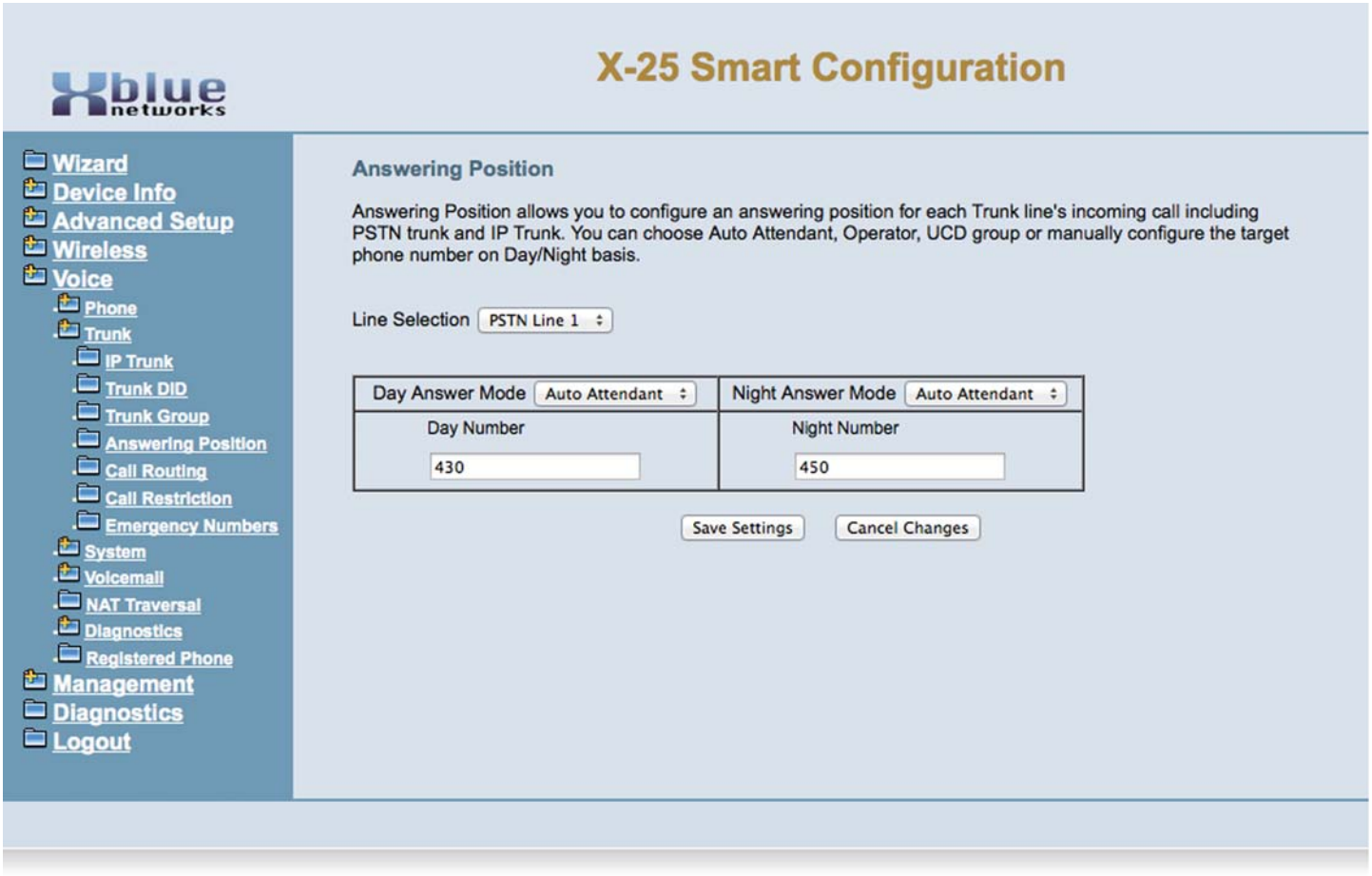
The X-25 system has four trunk groups, each supports one or more telephone lines. Trunk groups are used to group trunks that are used in similar ways, such as local and long distance calling. At default, all of the "PSTN" lines are in group 1 and SIP lines are in group 2.



Select how outbound calls will be accessed when a user dials out. You can select between SIP or PSTN lines first or second, and then increasing or decreasing order. At default, Trunk Group Priority is set to PSTN first, increasing. This means that they system will place calls starting with line 1, if it is busy, line 2, etc. If set to Decreasing the system will place calls starting with the last line in the system, then if that is busy, it goes to the next to last, etc.

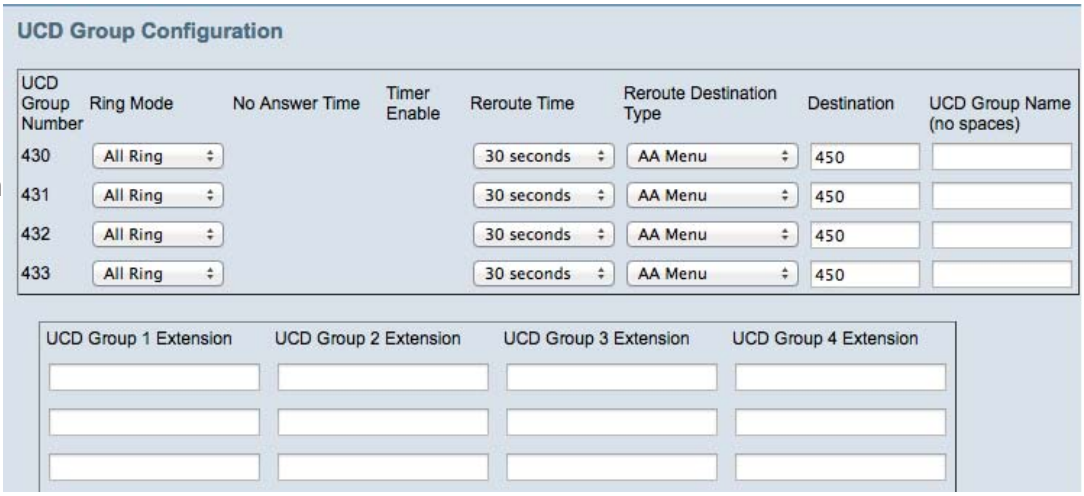
Answer Position

Answer Position also known as Ring Assignment, is where you define where each telephone line will ring into the system. Each line can be programmed to ring differently during the day and the night.



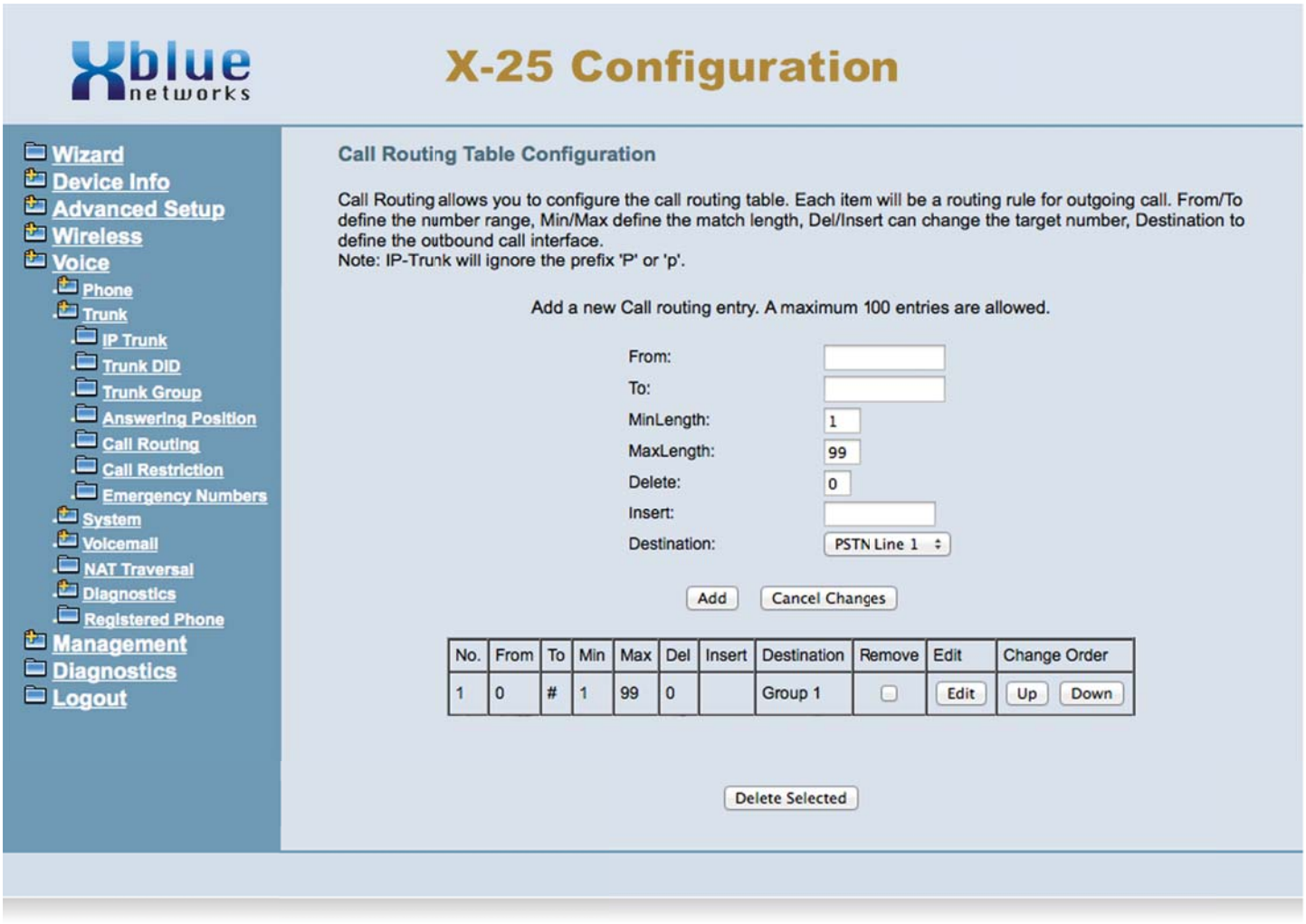
Using the drop down menus, select which line to program, and then select where it should ring during the day, and night. Select between ringing an *Extension*, the *Auto Attendant*, the *Operator* or a *UCD Group* (UCD - Uniform Call Distribution is a type of hunt group, that can contain one or more extensions that can be assigned to ring simultaneously, only when all other extensions are busy, or randomly. UCD group programming can be programmed at: System -> Numbering Plan -> UCD Group Number Start.

Select how the group will ring at the top of the page, and what extensions will ring in the bottom of the page. Extensions can be in one or more UCD Groups. The Reroute Destination and Type defines where a caller will go if it goes unanswered in the UCD Group.



Call Routing (Rules)

Call Routing is a set of "Rules" that you can set to automatically route dialed calls to a specific telephone line or line group. The rule will only be followed if all aspects of the rule are "True", otherwise it is ignored. Enter the information that will make up the rule and press "Add".



When defining rules, or entries, you will enter the From" or start number, which can consist of one to nine digits. An Entry of a single digit, such as "1", will route calls that begins with 1. An entry of 816 would route any number that begins with 816. All other numbers will pass to the next rule.

The "To" number will be the last number that will be routed by this rule. For example, if you want to route all numbers, except 900 numbers you would enter From 0 To 899. Then any number from 900 to 999 would not route using this rule. A second rule should be added to go From 901 To 999 so that calls start with these numbers are allowed.

You can select how many digits will be evaluated. If you want only want to evaluate seven digit numbers you would enter "minimum of 7, maximum of 7". If you want to evaluate all numbers dialed, you would enter from 1 to 99 dialed digits. Unless you are calling international numbers you could cap the dialed digits to 11.

You can also delete up 9 digits (first 9 in the dialed number) before the system actually dials the number on the telephone line. Similarly, you can insert, before the digits dialed, up to 9 digits. For example, a rule may have From 1913 To 1913, delete 4. If 1913-599-2583 was dialed, the system would delete 1913, and the system would only dial 599-2583. Conversely, you can set a rule to insert 1913, so when 599-2583 is dialed, the system actually dials 1913-599-2583.

Note:
For proper operation of redial, or using the dialed, missed, and received call logs, you may need to establish a rule for your home area code, which can be used to insert or delete specific digits.

The system accesses the rules sequentially, when a match is found, the call placed. Therefore, you may need to change the order of some rules as you create them. You will want to put the most specific rule first, then the less specific, etc. As a general rule, the default rule 1, should always be the last rule in this table.

At least one rule must be created for each line group, or that group may not be able to make telephone calls.

A common rule will be your home area code, meaning where the system is located. For example, if you live in Kansas your “Home Area Code Rule” would resemble - From 913 To 913, minimum 10, max 10, delete 3. A second rule may include From 1913 to 1913, Minimum 11, Max 11, delete 4. When a 10 digit number is dialed such as 913-599-2583, rule 1 will referenced and the system will only dial 599-2583, the 913 will automatically be deleted. If an 11 digit number is dialed such as 1913-599-2583, rule 2 would be referenced and the system will only dial 599-2593.

Examples:
Home Area Code - In these examples, which are for the state of Kansas, where 7 digit local numbers are still used, rules 1 and 2 will automatically delete the area code, rule 2 will delete the 1 as well. In addition, rule 3 will insert a 1 when someone dials a 10 digit number, which has become more popular since cellular telephones do not require a 1.

No.	From	To	Min	Max	Del	Insert	Destination	Remove	Edit	Change Order
1	913	913	10	10	3		Group 1			Up - Down
2	1913	1913	10	10	4		Group 1			Up - Down
3	2	9	10	10	0	1	Group 1			Up - Down
4	0	#	1	99	0		Group 1			Up - Down

Home Area Code - This example is for the metropolitan area of Scottsdale, AZ where local dialing is both 7 and 10 digits. This system is installed in the 480 area code.

No.	From	To	Min	Max	Del	Insert	Destination	Remove	Edit	Change Order
1	480	480	10	10	3		Group 1			Up - Down
2	1602	1602	11	11	1		Group 1			Up - Down
3	1480	1480	11	11	1		Group 1			Up - Down
4	1623	1623	11	11	1		Group 1			Up - Down
5	2	9	10	10	0	1	Group 1			Up - Down
6	0	#	1	99	0		Group 1			Up - Down

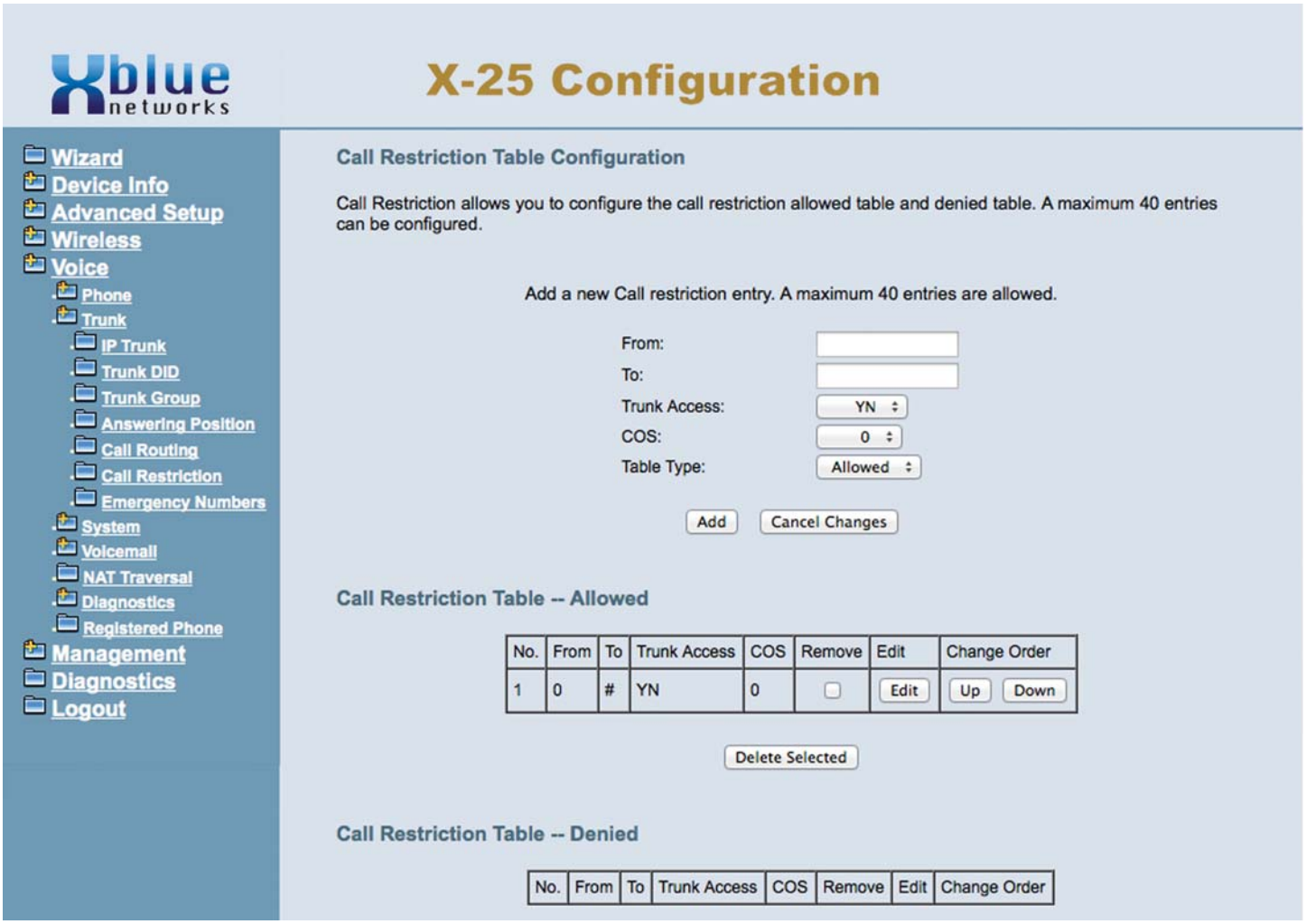
Rule 1 - is 480-123-4567 is dialed, the 480 is deleted
Rules 2, 3 and 4 - if anyone dials 1 + The area code, the 1 will be deleted.
Rule 5 - Anyone that dials any number that starts with 2 - 9, and the number is only 10 digits, the system will automatically insert the 1 for long distance dialing.

It is important to note, if rule 5 or rule 6 were the first entry, no other entries will be referenced. That is why they are the last entry in the table.

Call Restriction Rules

Call Restriction is a table of rules that allows the administrator to enter up to 13 digits, which when dialed can be allowed or denied. The X-25 system allows the administrator enter each rule and select which table, Allow or Deny will be referenced when a number is dialed.

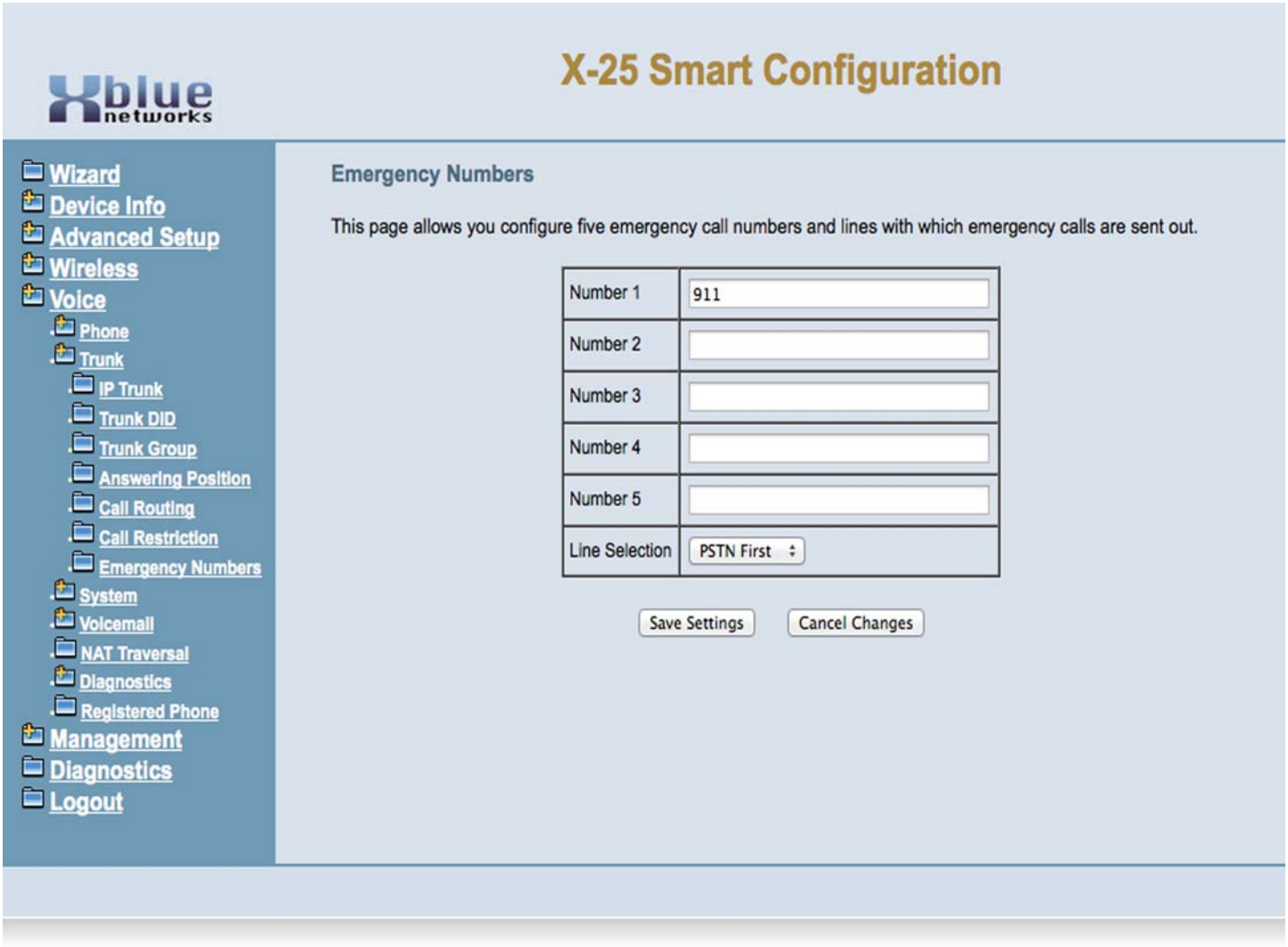
1. If the priority is set to "Denied" the system will use the following sequence:
   - If the dialed number matches a rule in the deny table, the call is denied. Otherwise, the call is sent to the allow table of rules. If there is no entry in the allow table, or if a match is found, the call is allowed. If a call does not match an entry in either the deny or the allow table, the call is denied.
2. If the priority is set to "Allow" the system will use the following sequence:
   - If the dialed number matches a rule in the allow table, the call is allowed. Otherwise, the call is sent to the deny table of rules. If there is no entry in the deny table, or no match is found, the call is allowed. If a call does not match an entry in either the allow or the deny table, the call is allowed.
3. Individual Table Entries
   - If there are rules entered only in the allow table only calls that match will be allowed, all other calls will be denied.
   - If there are rules entered only in the deny table only calls that match will be denied, all other calls will be allowed.



Enter as few as 1 or as many as 13 digits for each rule can be allowed or denied.

Routing Emergency Numbers

You may enter up to 5 emergency numbers that can be dialed regardless of Call Routing, Toll Restriction or Class of Service.

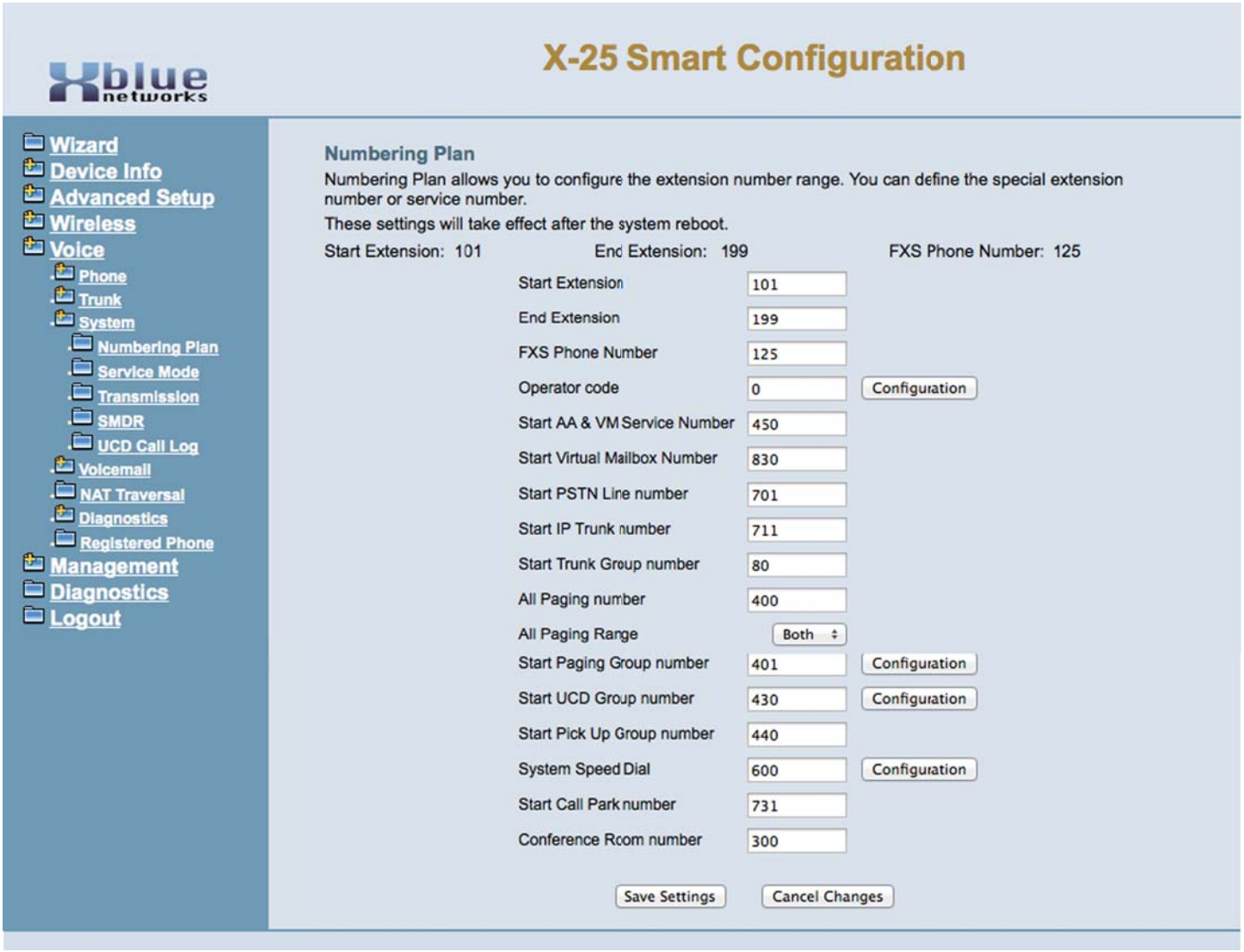


System

The System Parameters are used to modify parameters that affect all connected telephone Lines and telephone devices.

Numbering Plan

The Numbering Plan is used to define the dial plan for the whole telephone system. Although the system comes up operational with an existing numbering plan, you can customize the numbering plan. If a number is labeled as "Start", the dial sequence will be sequential, for example, "Start PSTN Line Number" shows "Start PSTN Line Number 701", so the next three dial codes will be 702, 703 and 704.



Extension Numbering

You may select between 2, 3 and 4 digit extension numbering plans. The last number will be the FXS, which is the port labeled "TEL" on the X-25 system and supports a standard cordless telephone. The numbers entered cannot conflict with any other sequence of numbers. For example, you could not set the numbering plan to 400 without changing the All Paging Number first. Also, avoid common 3 digit numbers such as 311, 411, 911, etc.

Two digit	Three Digits	Four Digits
10	101	1001
27	117	1027

Operator Code

At default when you dial zero (0) you will ring extension 101 both day and night. To change this click, on Operator Code and you can select the same or different Operators for day and night. In addition, if the defined operator is busy on a call, you can device an alternate day and night operator. You may also define how long an extension will ring before the call is rerouted.

Paging Group

You may group extensions together that will receive a common page announcement when the telephone is idle and within the same Subnet. There are three groups, the default dial codes are 401, 402 and 403. Each group can have up to sixteen extensions and an extension can be in more than one group.

Start UCD Group Number

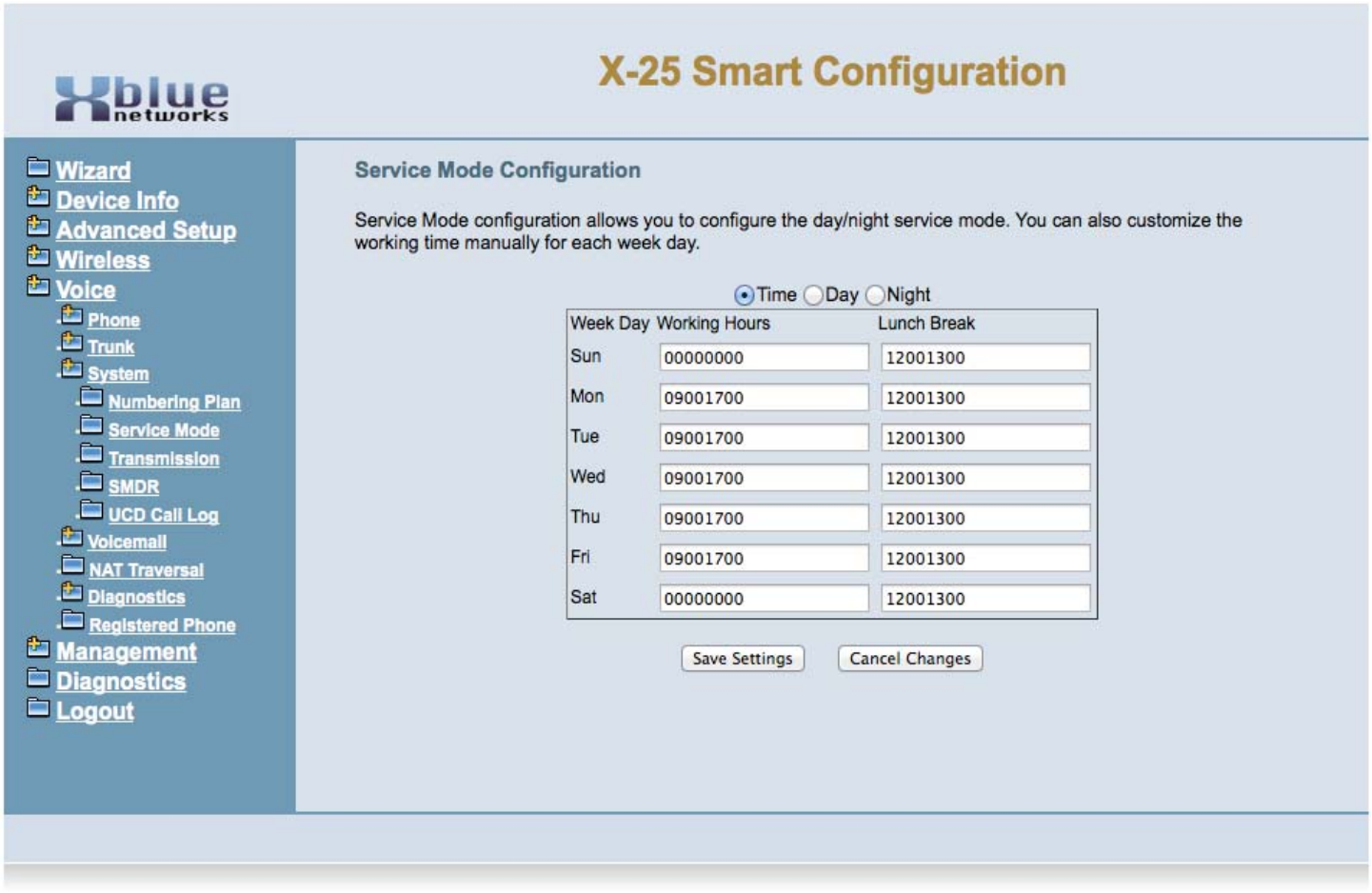
There are four Uniformed Call Distribution (UCD), or Hunt groups, each can have up to 16 telephones and telephones can be in more than one Group. The default dial codes are 430, 431, 432 and 433. Each group can be programmed to be all ring, so that all extensions, with in the group can ring simultaneously, Linear - which rings the phones in the order that they are entered or Distributed - which rings the extension, within the group, that has been on hook and idle the longest.

System Speed Bins

There are 100 system speed bins, default dial codes 600~699, which can be accessed by all authenticated extensions. The extension will dial the three digit code and the stored number will automatically be dialed. A .csv file can be used to import a list of numbers.

Service Mode

The system can run one of three different modes; Day, Night or Timed. While in the Day mode, calls will ring into the day ringing location, the day Auto Attendant outgoing message (greeting) will play, and the Day Class of Service will be applied to extensions' dialing privilege. While in the Night mode, calls will ring into the night ringing location, the night Auto Attendant outgoing message (greeting) will play and the Night Class of Service will be applied to extensions' dialing privilege. In timed mode, the system will automatically switch between day and night modes. The system will be in day mode between the working hours, an entry of 08001700 will place the system into day mode between 8 AM and 5 PM, after which the system will be in night mode. In addition, you may define a break time which will play a special Lunch Outgoing message (greeting) but does not affect the dialing or ringing assignment.

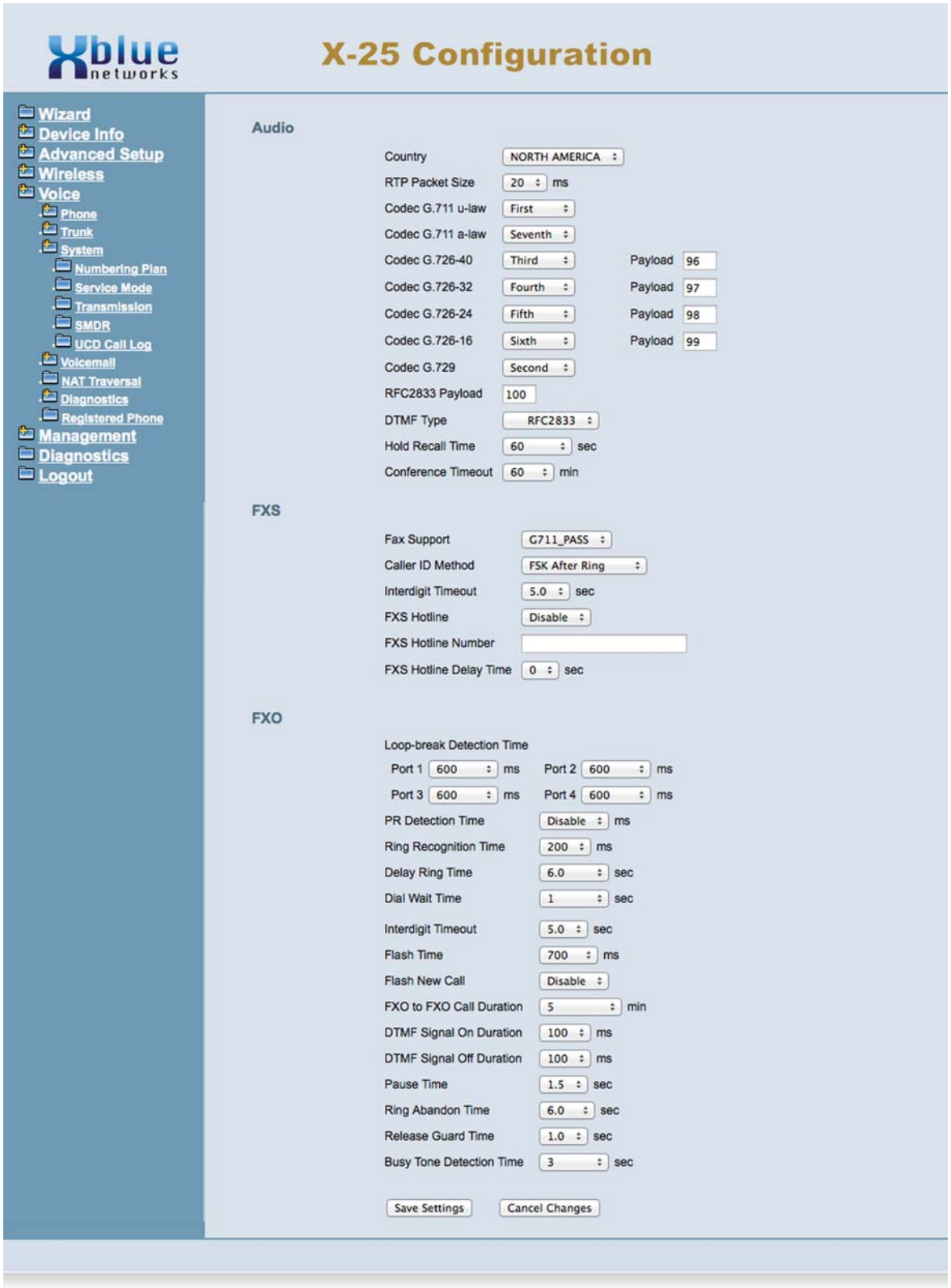


Note: An entry of 000000 will not change the system's current mode. For example, at default both Saturday and Sunday are set to 000000, so the system remains in night mode over the weekend.

All times are entered in 24 hour format, which during the morning hours is 0 + The actual time, 08, 09, plus 11, and 12. The afternoon, the time is calculated by adding 12 to the time. For example, 2pm + 12 = 14:00, 3pm + 12 = 15:00, 4pm +12= 16:00.

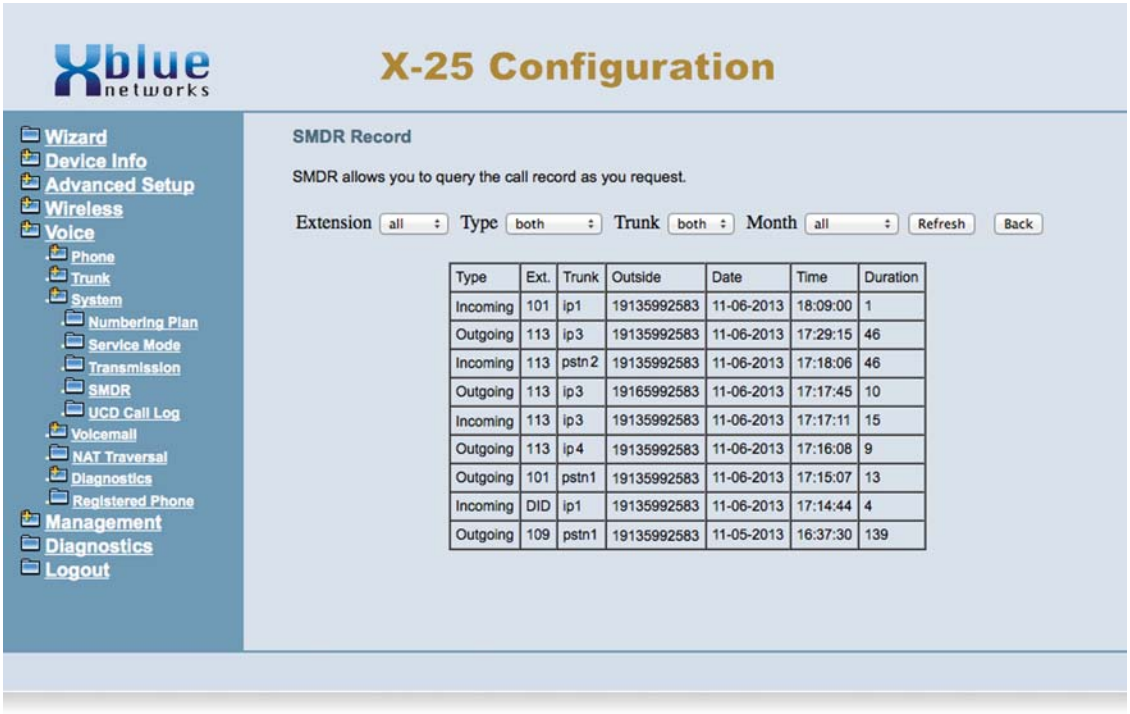
Transmission

The Transmission area of programming allows you to customize the low-level settings of the telephone system. These parameters are preset by the country that the system is installed and are usually not changed. Only change these parameters if you are on the line with an XBLUE Networks Technical Support or other qualified telephone technician.



SMDR

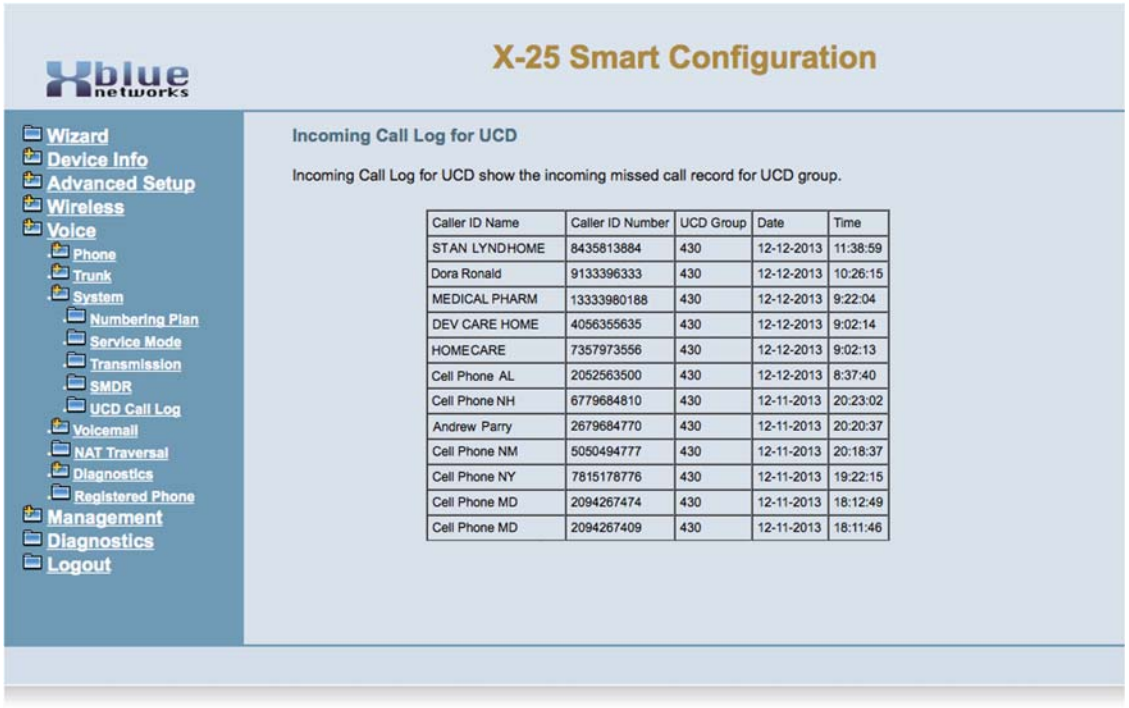
Station Message Detail Recording (SMDR) can be enabled to create a log of incoming and outgoing calls that can be reviewed. You may highlight the list, copy and paste it into an spreadsheet application.



Type	Ext.	Trunk	Outside	Date	Time	Duration
Incoming	101	ip1	19135992583	11-06-2013	18:09:00	1
Outgoing	113	ip3	19135992583	11-06-2013	17:29:15	46
Incoming	113	pstn2	19135992583	11-06-2013	17:18:06	46
Outgoing	113	ip3	19165992583	11-06-2013	17:17:45	10
Incoming	113	ip3	19135992583	11-06-2013	17:17:11	15
Outgoing	113	ip4	19135992583	11-06-2013	17:16:08	9
Outgoing	101	pstn1	19135992583	11-06-2013	17:15:07	13
Incoming	DID	ip1	19135992583	11-06-2013	17:14:44	4
Outgoing	109	pstn1	19135992583	11-05-2013	16:37:30	139

UCD Call Log

This is a list of calls that were received into one or more of the UCD Groups. You may highlight the list, copy and paste it into an spreadsheet application.



Caller ID Name	Caller ID Number	UCD Group	Date	Time
STAN LYNDHOME	8435813884	430	12-12-2013	11:38:59
Dora Ronald	9133396333	430	12-12-2013	10:26:15
MEDICAL PHARM	13333980188	430	12-12-2013	9:22:04
DEV CARE HOME	4056355635	430	12-12-2013	9:02:14
HOMECARE	7357973556	430	12-12-2013	9:02:13
Cell Phone AL	2052563500	430	12-12-2013	8:37:40
Cell Phone NH	6779684810	430	12-11-2013	20:23:02
Andrew Parry	2679684770	430	12-11-2013	20:20:37
Cell Phone NM	5050494777	430	12-11-2013	20:18:37
Cell Phone NY	7815178776	430	12-11-2013	19:22:15
Cell Phone MD	2094267474	430	12-11-2013	18:12:49
Cell Phone MD	2094267409	430	12-11-2013	18:11:46

Voicemail

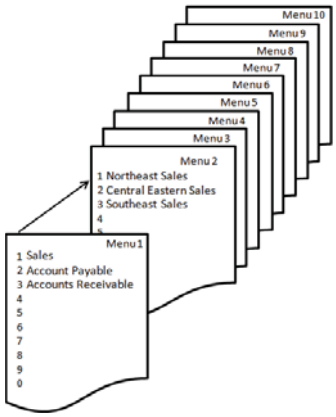
The X-25 system comes complete with an integrated Auto Attendant (Automated Receptionist) and voicemail system. The system can be programmed to answer with the auto attendant, bypassing the traditional attendant, allowing callers to dial digits and route their call to the appropriate destination. Each extensions in the system can be assigned a mailbox so that they may receive private messages. In addition, the system can be programmed to attach a standard “WAV” file, of the voicemail message, to an email so that you can listen messages on a multimedia computer or smart telephone.

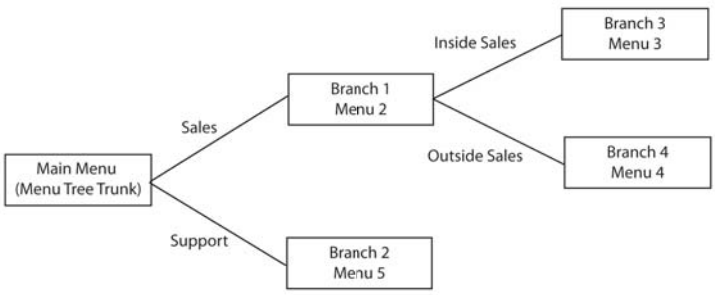
Auto Attendant

An Auto Attendant’s job is to answer incoming calls and play a prerecorded message. The system comes with a prerecorded outgoing message but it easily be customized. Generally, an Auto Attendant will offer you a list of choices, known as menu options, such as, “For sales press 1, for Support press 2...etc., In the X-25 system, this function is called “Single Digit Dialing” and is found on the “General Voicemail Page”. Each menu has five different greetings; Day (played when the system is in day mode), Night (played when the system is in night mode), Lunch (played when the system is in lunch break mode), Holiday (played during a defined holiday) and Temporary (played when the system is in temporary mode.

Menu Options

Auto attendant menu options can be as simple as a single level, where all of the options are presented on one menu, or as complex as a multi level menu tree. Generally, a menu tree is used to guide callers to specific extension users. For example, the main menu (trunk of the tree) explains your company information, then guide the caller to a group, such as “Sales press 1”, then in the first branch, you may want to narrow the group down, such as “For Inside Sales Press 1, Outside Sales Press 2, etc. You can do this for each group, for a total of 9 branches off of the main menu trunk.





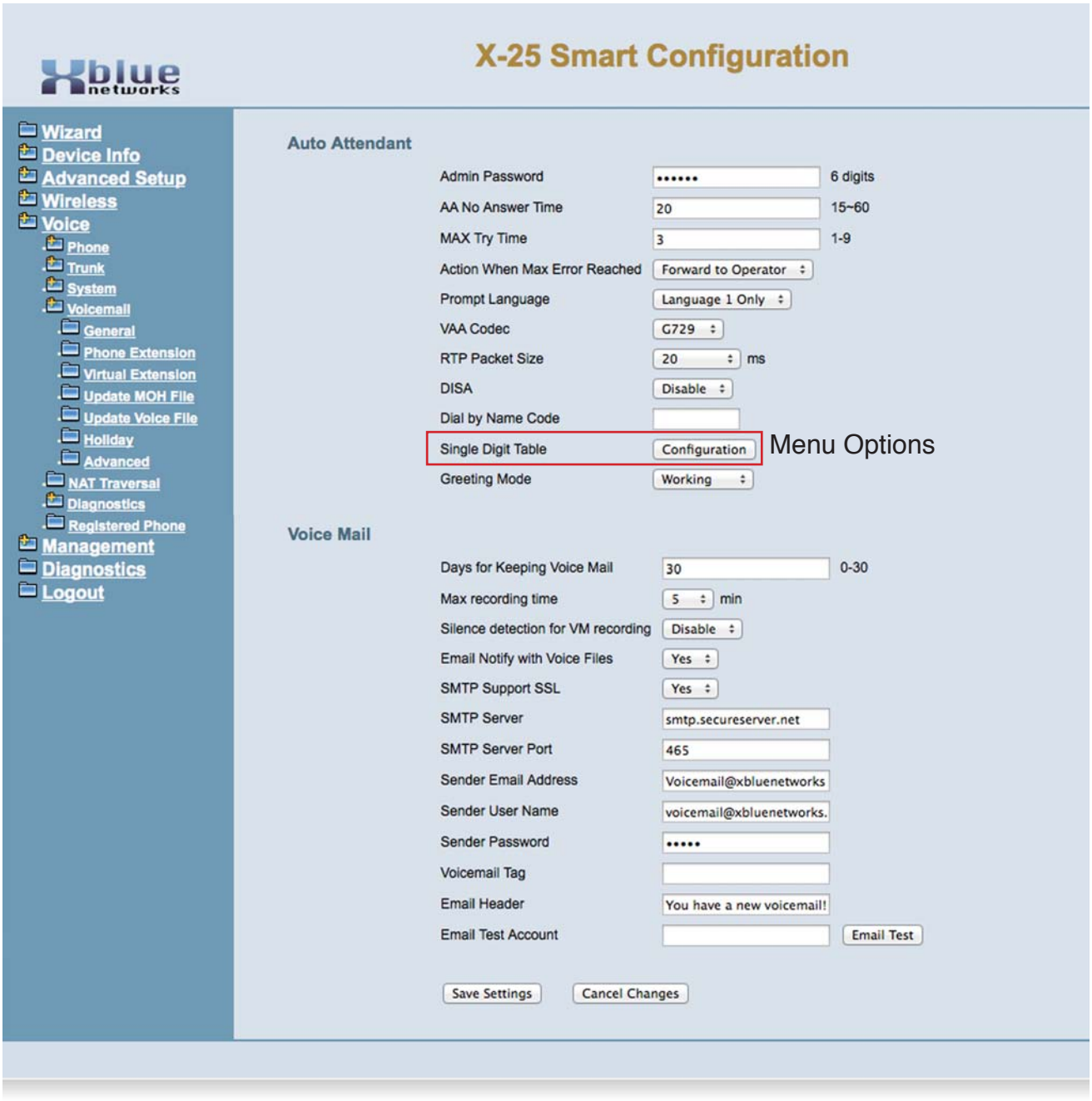
Outgoing Messages (Greetings)

To customize the systems outgoing messages (Greetings) you will press your mailbox button and when asked enter your mailbox password. Then press “*” and you will be prompted for the system administrative password, which at default is six zeros (000000).

Press 1 to record your outgoing messages.

Enter the menu greeting to be rerecorded. Menu greetings are numbered from 0 through 9 and corresponds with the Auto Attendant dial codes 450 - 459. This means if you dial 450 you will hear the greetings for menu 0, 451 you will hear the greetings for menu 1, 452 you will hear the greetings for menu 2, etc.

General Settings



- Admin Password - This is the password that is used when rerecording the system’s outgoing messages.
- MAX Try Time - Enter the number of times between 1 and 9 that a caller can enter the wrong information before being sent to the action when “Max Error Reached”.
- Action When MAX Error Reached - These are the two destinations; forward to operator or disconnect.
- Prompt Language - Currently only English is supported
- VAA Code - The default is set to PCMU - which is required in the United States.
- RTP Packet Size - At default this is set to 20 milliseconds and is adjustable from Dynamic, 10 - 60, but should remain set to 20 unless otherwise instructed by an XBLUE Networks Technical Support Engineer.
- DISA - Direct Inward System Access - This feature, when enabled, allows inbound callers to enter a code and gain access to system features such as outbound calling. Note: Enabling this feature may result in unexpected long distance charges, which are the sole responsibility of the owner/user of the equipment.
- Dial by Name Code - Enter the code that will be use by caller when dialing a person’s name, once they are answered by the automated attendant. Once this code is selected, it will automatically reserve the entered number on all 10 menus (0 - 9).

“Voice”

- Single Digit Table - This is where you define the menus and menu routing (see Menu Options).
- Greeting Mode - The administrator can override the systems “Service Mode” and force the system into only Day, only Night or Temporary mode. This is very helpful to place the system into “temporary mode” when you are experiencing inclement weather.

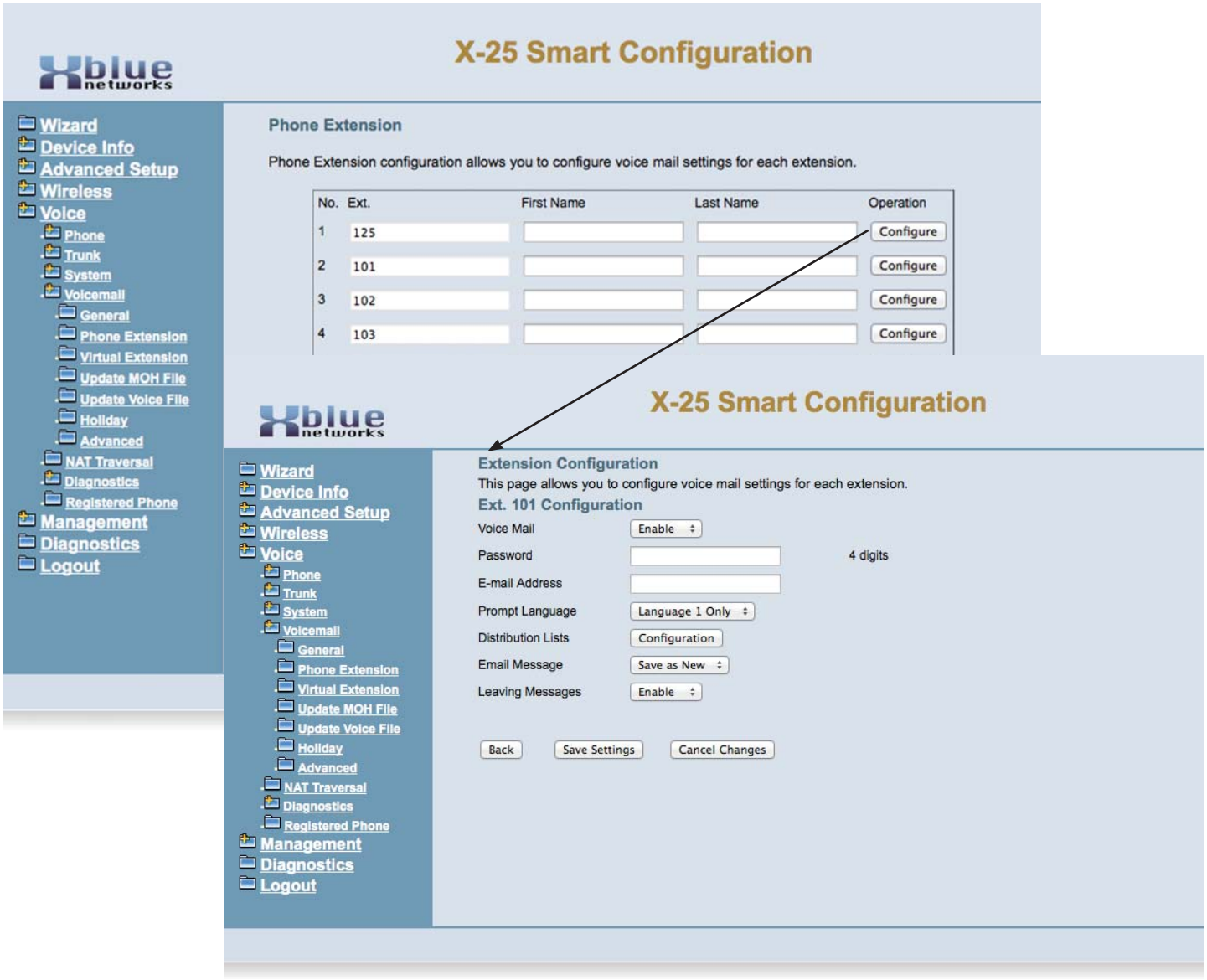
Email Delivery of a voicemail message

The **X**-25 system requires its own email address, such as voicemail@yourcompany.com in order to email a message. You will then enter the same information that you would enter in an email client such as outlook or your smart telephone. Not all email providers will allow a “Third Party” (the system) send an email.

- Email notify when voice files - enable or disable - the delivery of a voicemail message. This must be set to “Yes” or no emails will be sent.
- Days for keeping voicemail - How many days should the system keep a voicemail message before it is deleted.
- SMTP Support SSL - Your email provider may or may not require SSL.
- SMTP Port - The default SMTP port is 25, however you Email provider may require a different port such as 80, 587, 465 or 995.
- Sender Email address - This is the system’s email address such as voicemail@yourcompany.com
- Sender User Name - This is the system’s email address such as voicemail@yourcompany.com
- Sender Password - This is the email accounts password.
- Max recording time - This is the maximum length of a message that can be emailed.
- Silence detection for VM recording - This ensures that telephones line callers are properly disconnected
- Voicemail Tag - probably not used - this will send the entered number, such as a telephone number.
- Email Header - Enter what the email should show in the “Subject” line of an email.
- Email Test Account - Enter the SMTP Server and press “Test” to see if the server will allow the system to send an email.

Phone Extension

Enter the “First” and “Last” name of the user of each mailbox. These names are used if “Dial By Name” is enabled. In addition, each extension must record their “Name” to place the name in the dial by name function.



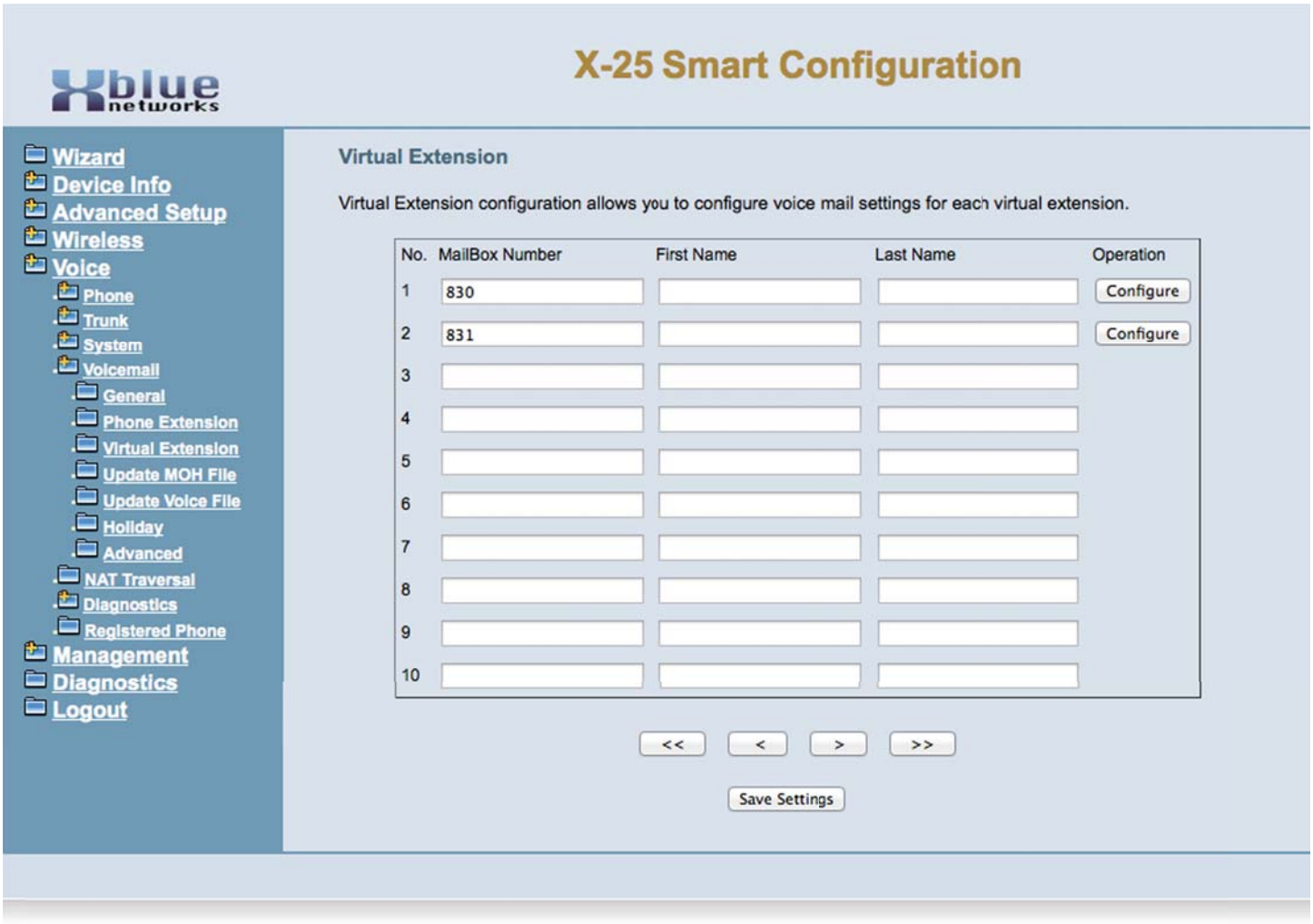
- Click on “Configure” and enable or disable the mailbox.
- Enter the mailbox password, the default is four zeros (0000)
- Enter the mail address, if this user will be receiving email delivery
- Prompt Language - English is the only language supported.
- Distribution list - Create a list of voice mailboxes, usually a group such a “Sales” that should receive a single voicemail Message.
- Email message - After the email is sent, the system can save the message as New, old or delete the message completely.
- Leaving Messages - Each mailbox can be set to accept messages or not. If set to disable, the mailbox will play the recorded message and then disconnect.

“Voice”

Virtual Extension

The X-25 can have up to 16 virtual or phantom extensions, which are used for employees that do not have a physical telephone, but want to have a mailbox on the system. Once a virtual number is assigned you can dial it directly, transfer calls directly to the mailbox, and it can be used as an answer position and even DID Routing extension. In addition, the virtual extensions can be programmed to receive an email each time a new message is received.

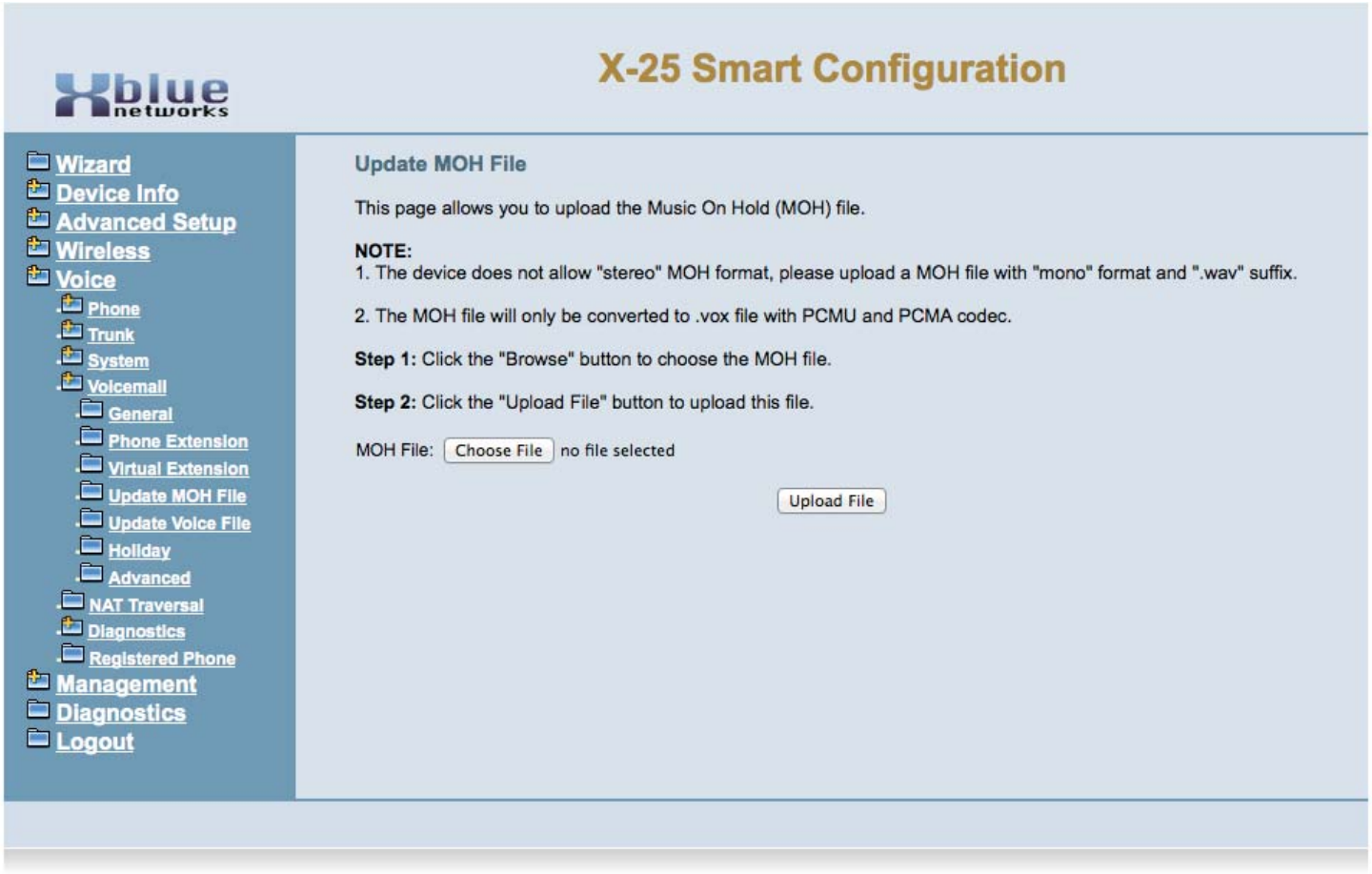
Enter the user’s first and last name so that they can be added to the dial by name, after their name is recorded. Click on “Configure” to enter the email address, just like with Phone Extension.



A virtual Extension can also be programmed on multiple extensions, which will light on all telephones when a new voicemail message is left in the box. When one of the extensions picks up the message, the light will be extinguished on all telephones.

Update MOH File

The X-25 comes with Music on Hold, which is played to callers that are placed on hold. You can change this file by uploading a mono “WAV” file, which is a maximum of 5000K.



Check http://xbluenetworks.com/x25-support.html, select the Downloads Tab, and locate the procedure to prepare a MOH file for upload to the X-25 system.

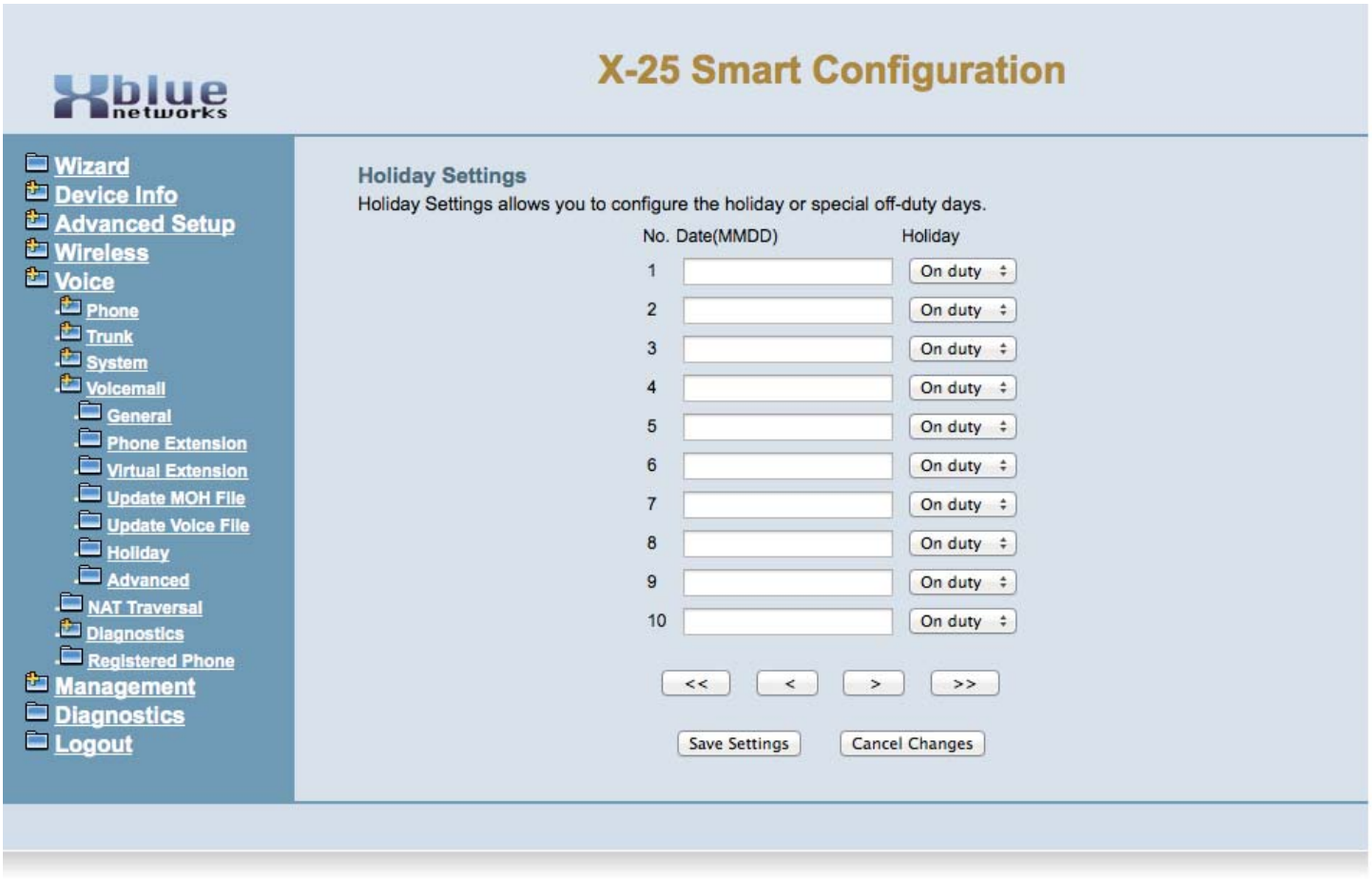
“Voice”

Holiday Settings

This allows you to preprogram up to 20 different dates to play a special holiday greeting. The holiday greeting will only play when the dates match the entry, after that date, the appropriate day or night greeting will begin playing automatically.

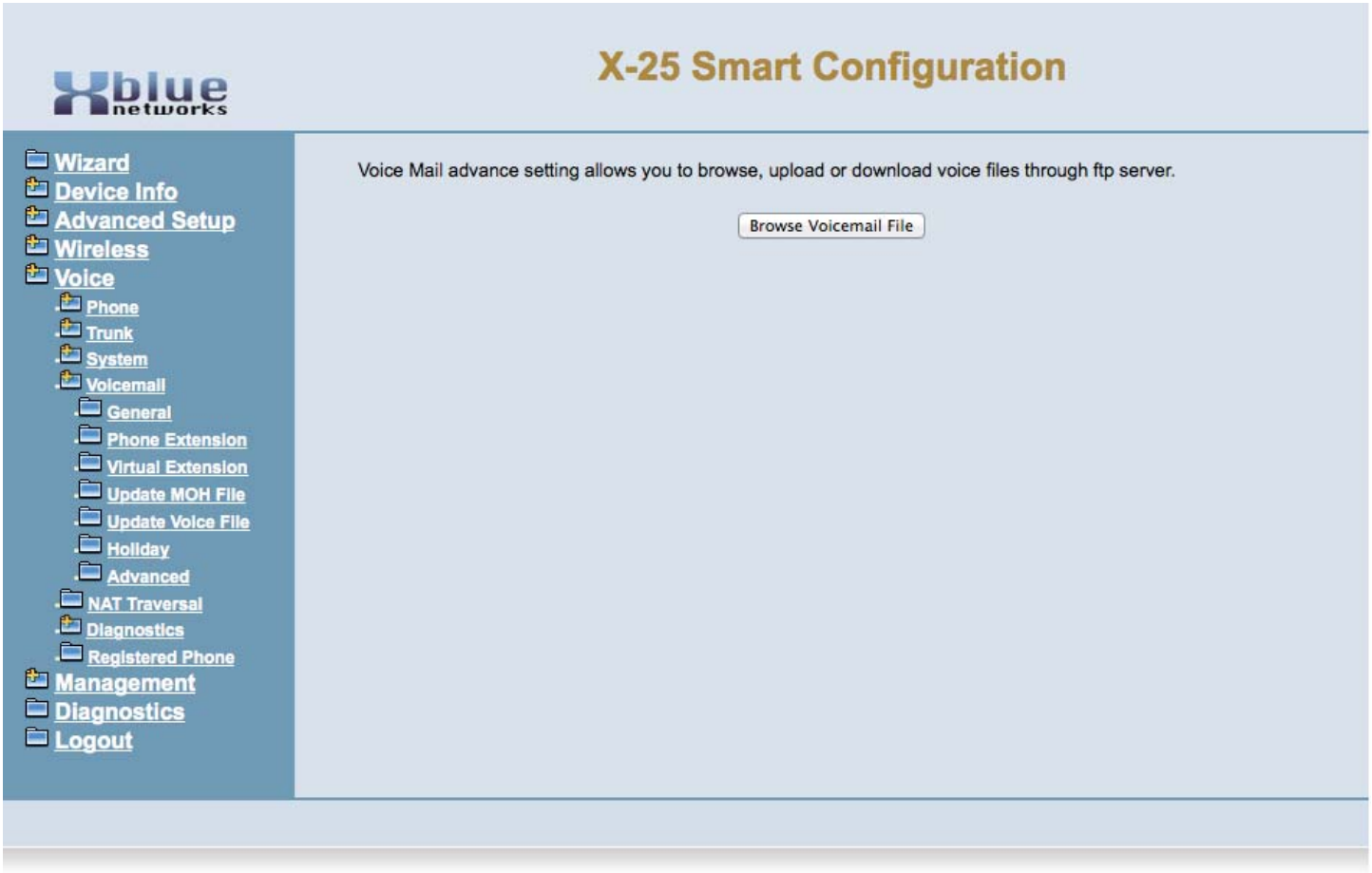
If the holiday is more than one day you will have to enter both days for the proper holiday greeting to play. For example, if you are off on January 1 and 2, you will enter 0101 and 0102.

Select “On Duty” to use the entered date, and “Off Duty” if you want the date ignored.



Advanced

This open an FTP connection, if enabled, between the Personal Computer and the X-25 system.



WARNING - Any changes made with this page may result in erratic operation. DO NOT make any changes unless instructed to do so by an XBLUE Networks technical support engineer or other qualified technician.

“Voice”

NAT Traversal Configuration

Network Address Traversal (NAT) is used to allow remote telephones to register to your X-25 even when it is behind a firewall or another router using NAT.

Management

The management parameters are used to save system settings, restore the system back to factory default, System log, setting the date and time, change passwords and port access, update system software, etc.

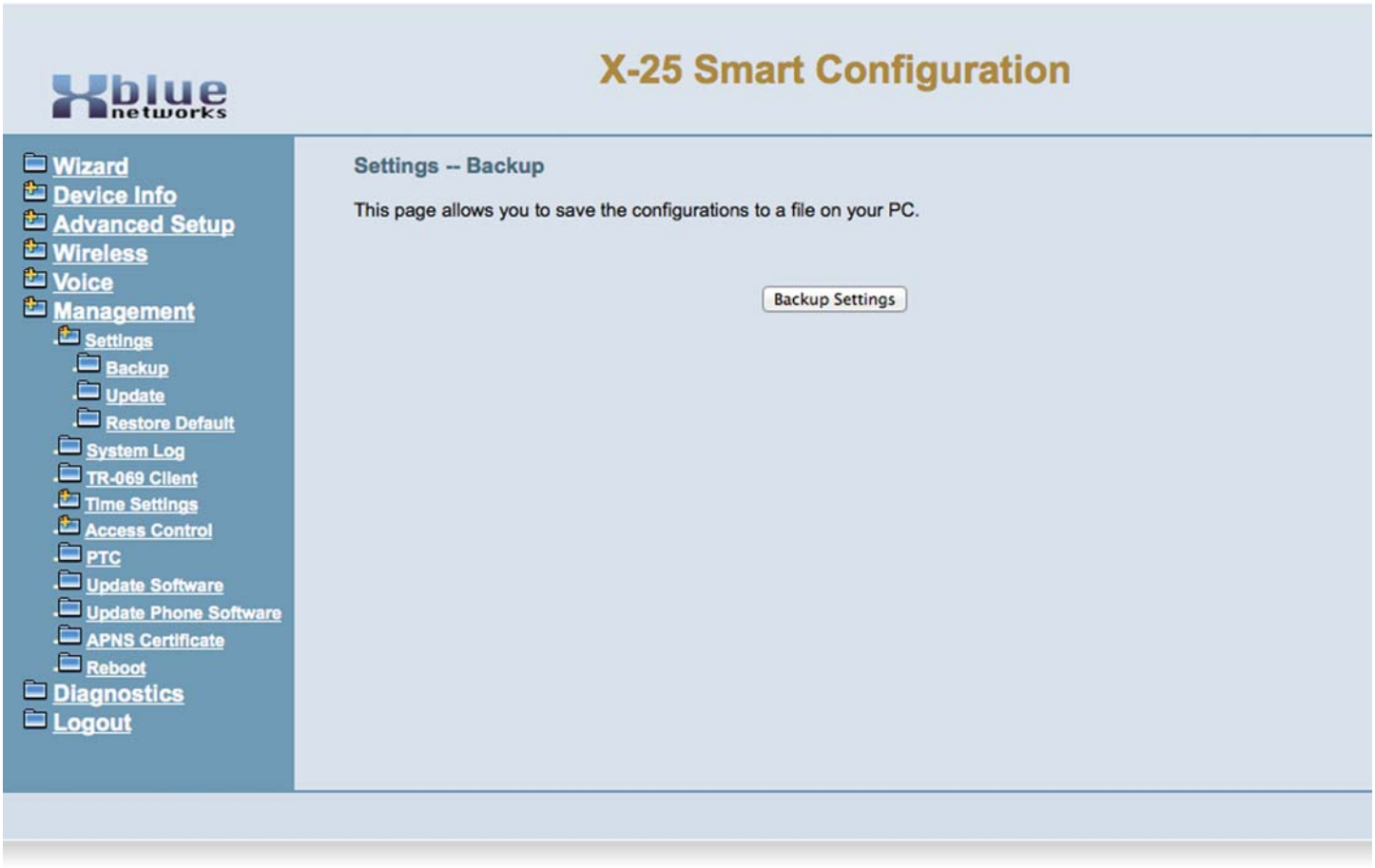
Settings

There are three parameters in the Settings area, Backup of your system settings, update - load an existing backup restoring the system settings and Restore the system back to factory default.

Backup

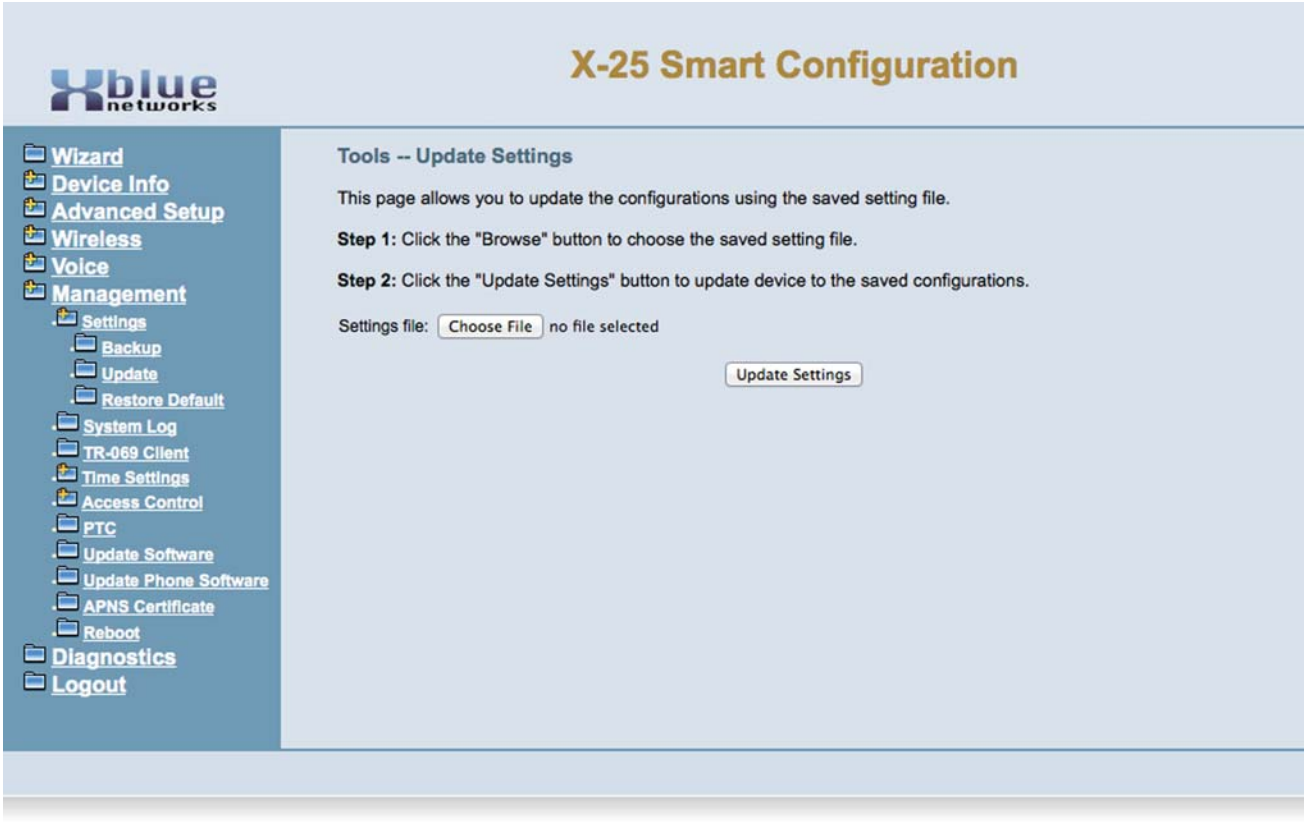
The Backup parameter gives you the ability to download the system's current settings. To ensure that you have the most up-to-date backup, you should perform a backup every time you make any programming changes to your system.

Click on "Backup Settings" and save the file in a location that is easy to find, such as \\X-25 Backups\. It is also a good idea to use a sequential numbering scheme such as 1-1-2015 BackupSettings.tar.



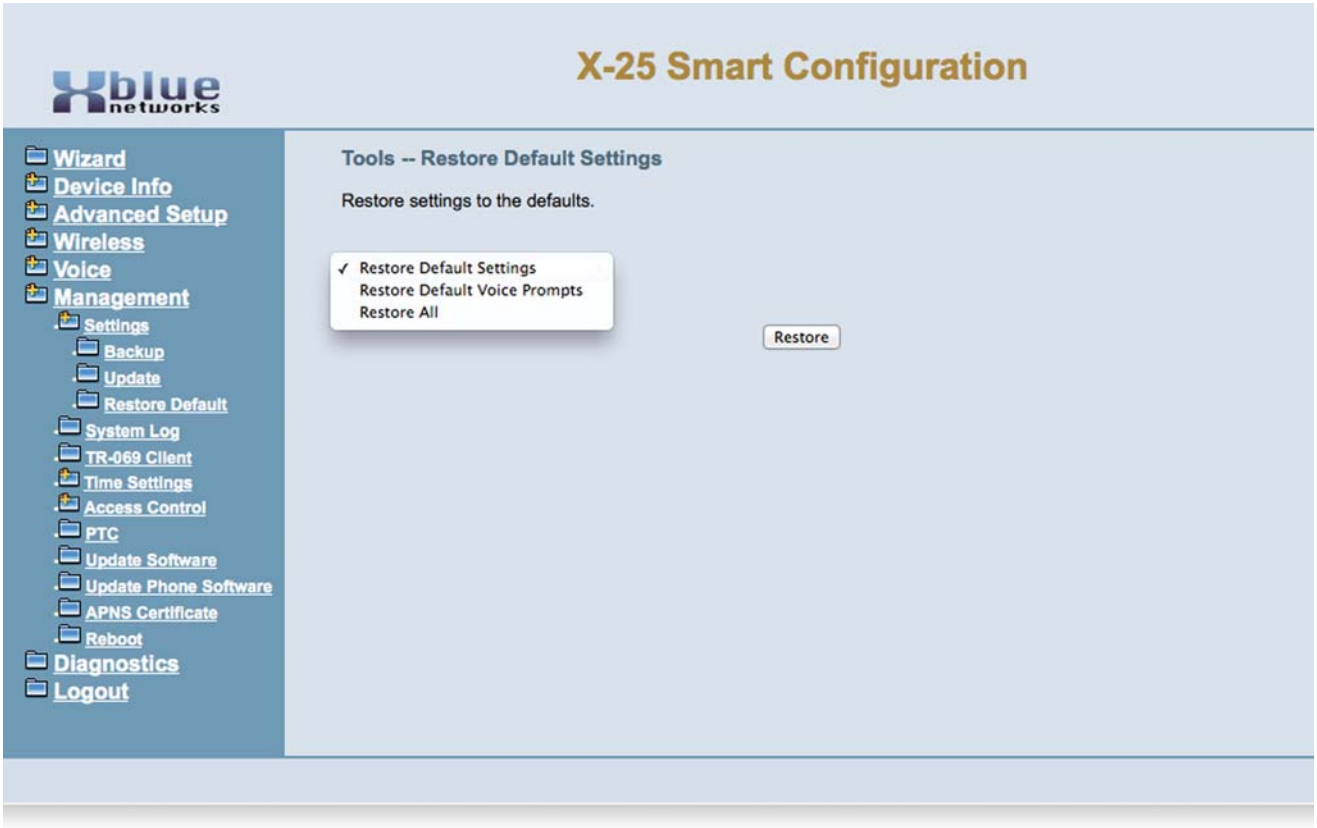
Update

This parameter is used to upload a previous system backup



Restore Default

Most commonly used for troubleshooting, the restore default sets the system back to factory default. The system can be reprogrammed manually or upload a previous backup. There are three areas of programming that can be defaulted, Just the Settings, Just the voice prompts, or the whole system.



System Log

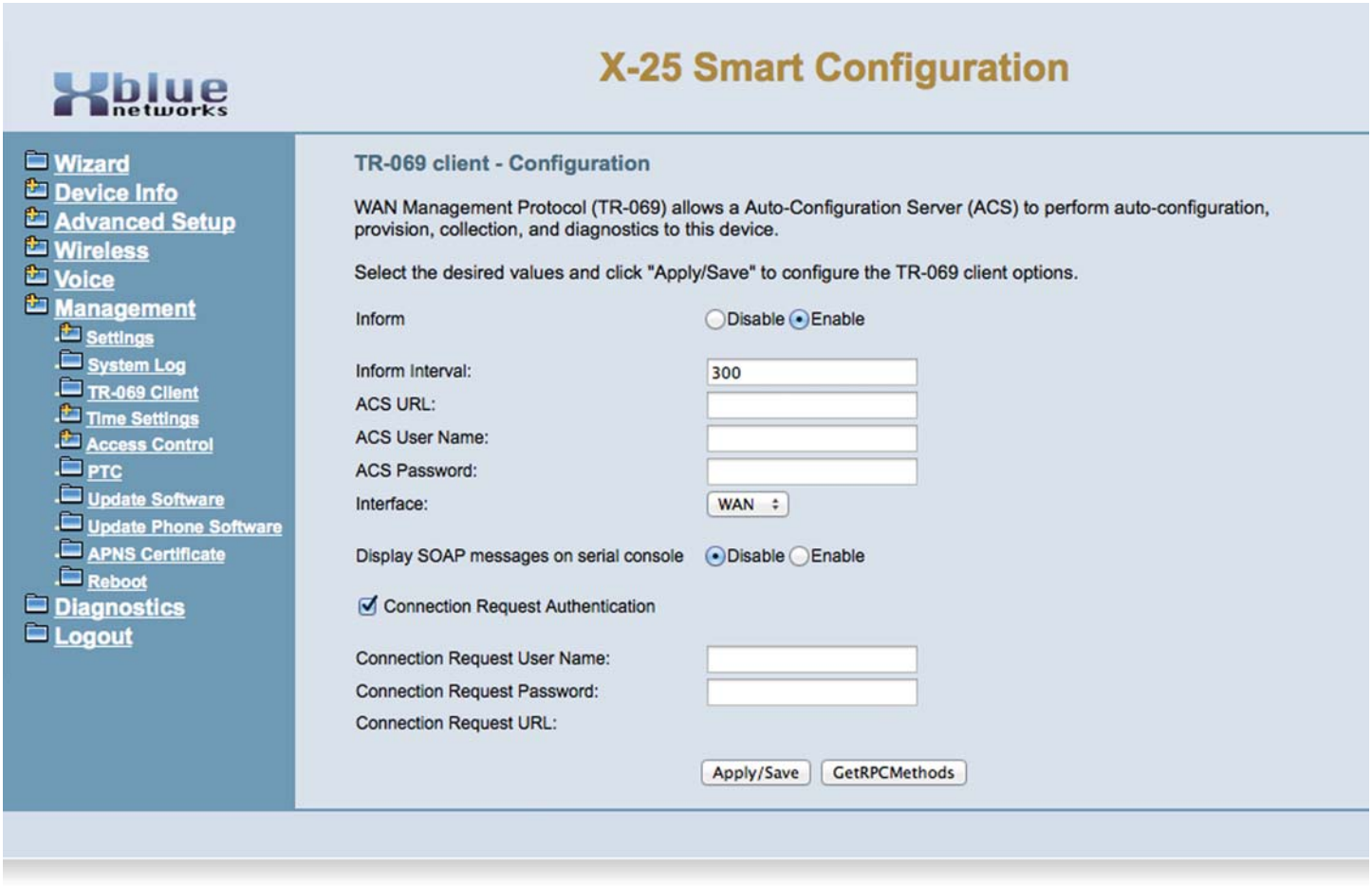
The system log is used to verify and diagnose networks settings and errors. There are several different levels of system logs from, “Informational to Critical”. Generally, a technical support engineer will ask you to enable this parameter for troubleshooting.

Select “System Configuration Log” to select the level of logging required. Then select, “Enable” and Apply to begin logging.

Note: Enabling the System Log, in Debugging mode, may cause the system to operate erratically. This parameter should only be enabled when asked to do so by a technical support Engineer.

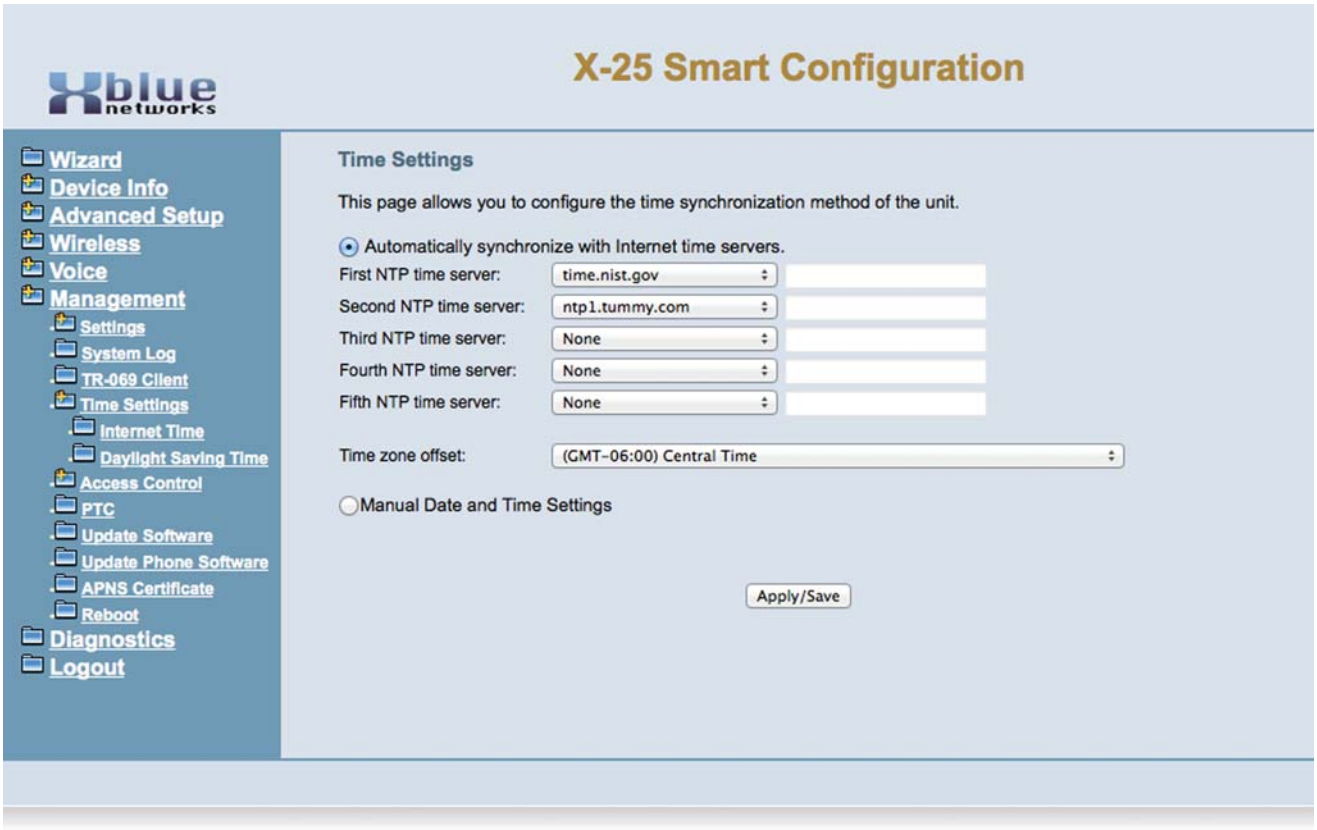
TR-069

TR-069 is the protocol for Wide Area Networks (WAN) Management which defines the auto configuration of a server. This is not currently used.

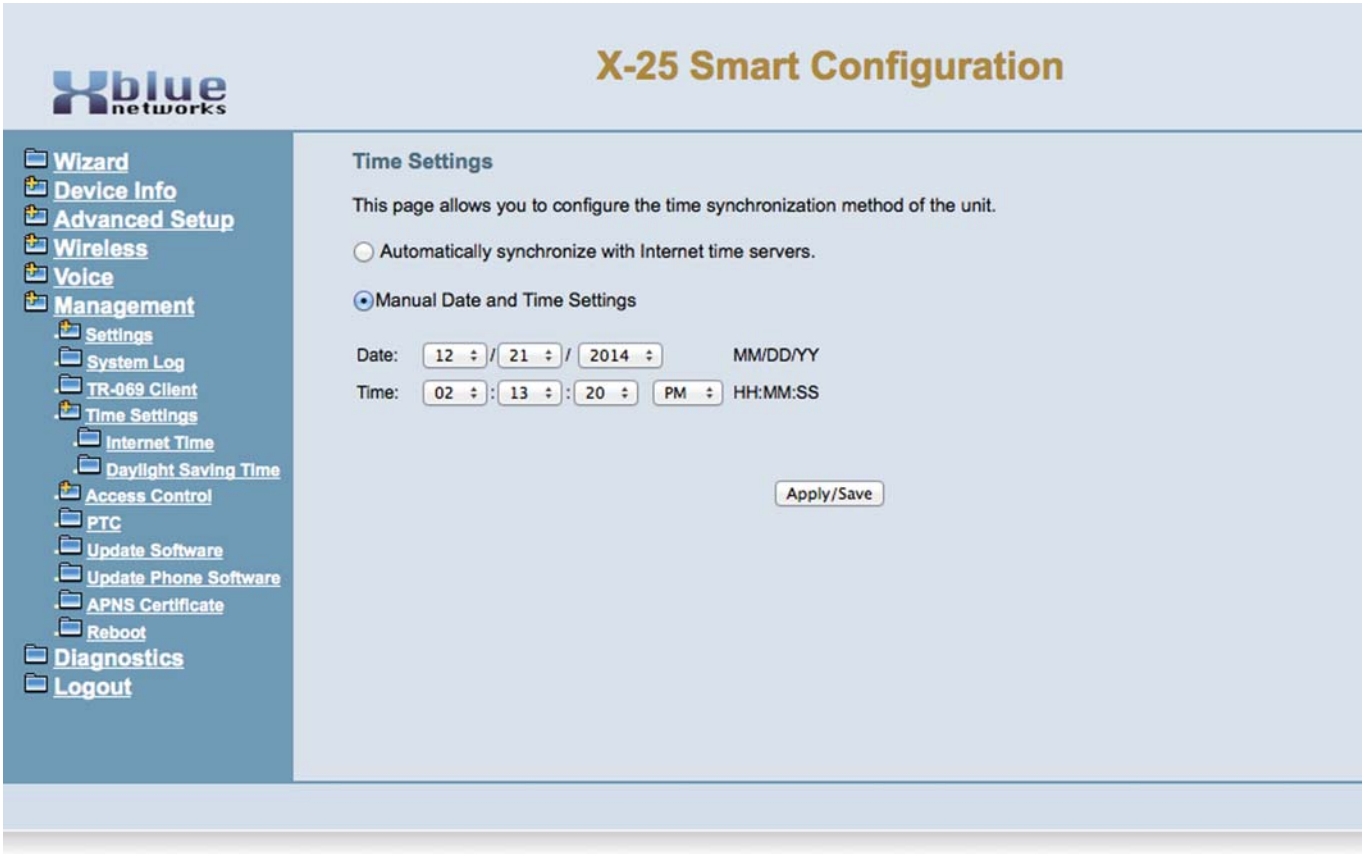


Time Settings

Using the WAN Port the X-25 has the ability to synchronize the date and time with up to five different time servers, and it can be set to use automatic daylight savings time rules.

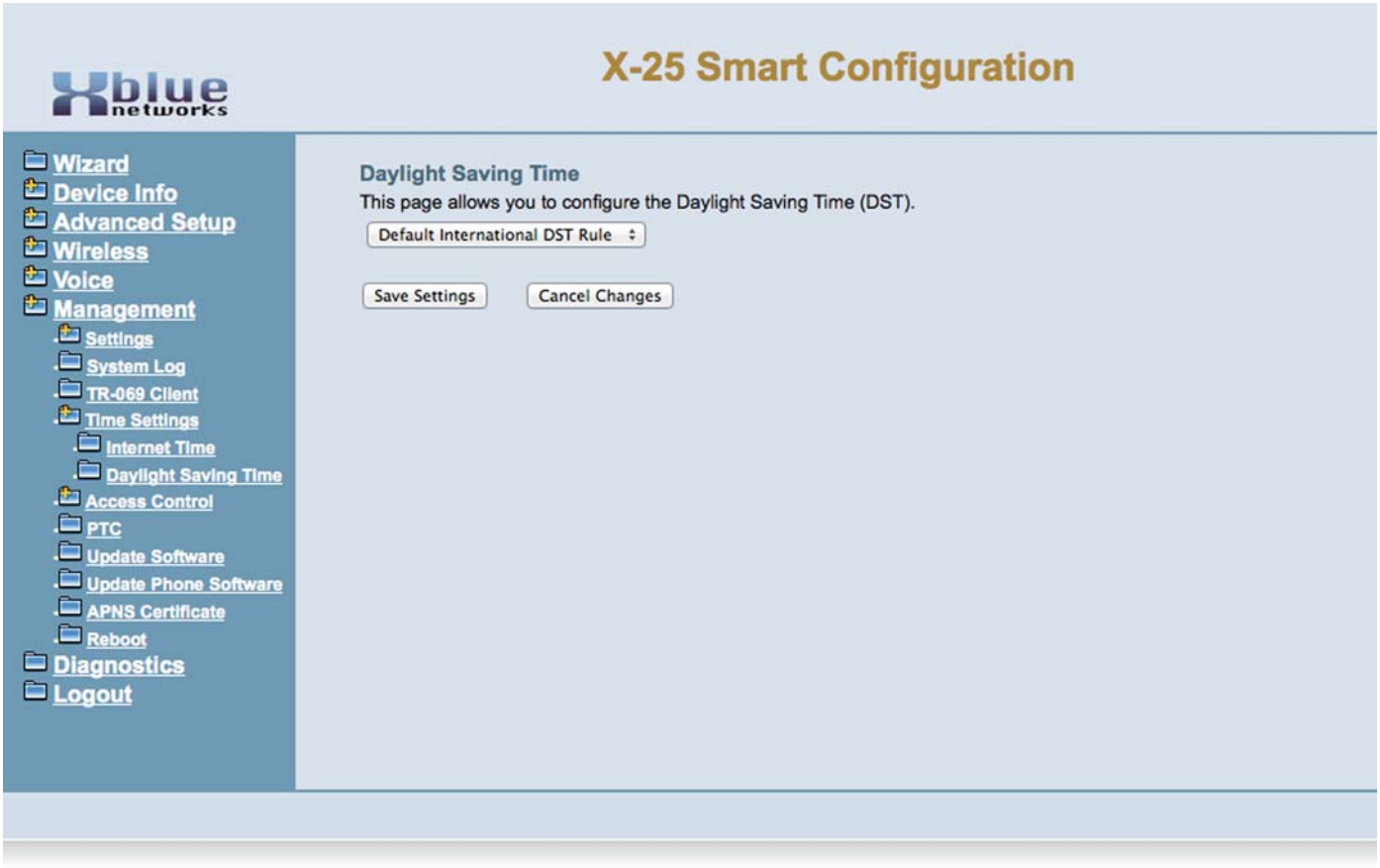


If using only the LAN port or using the system as a standalone telephone system, you may set the date and time manually.



Daylight Savings Time

The system, at default, is set to automatically adjust for daylight savings time. Or you can set so that you can change it manually.



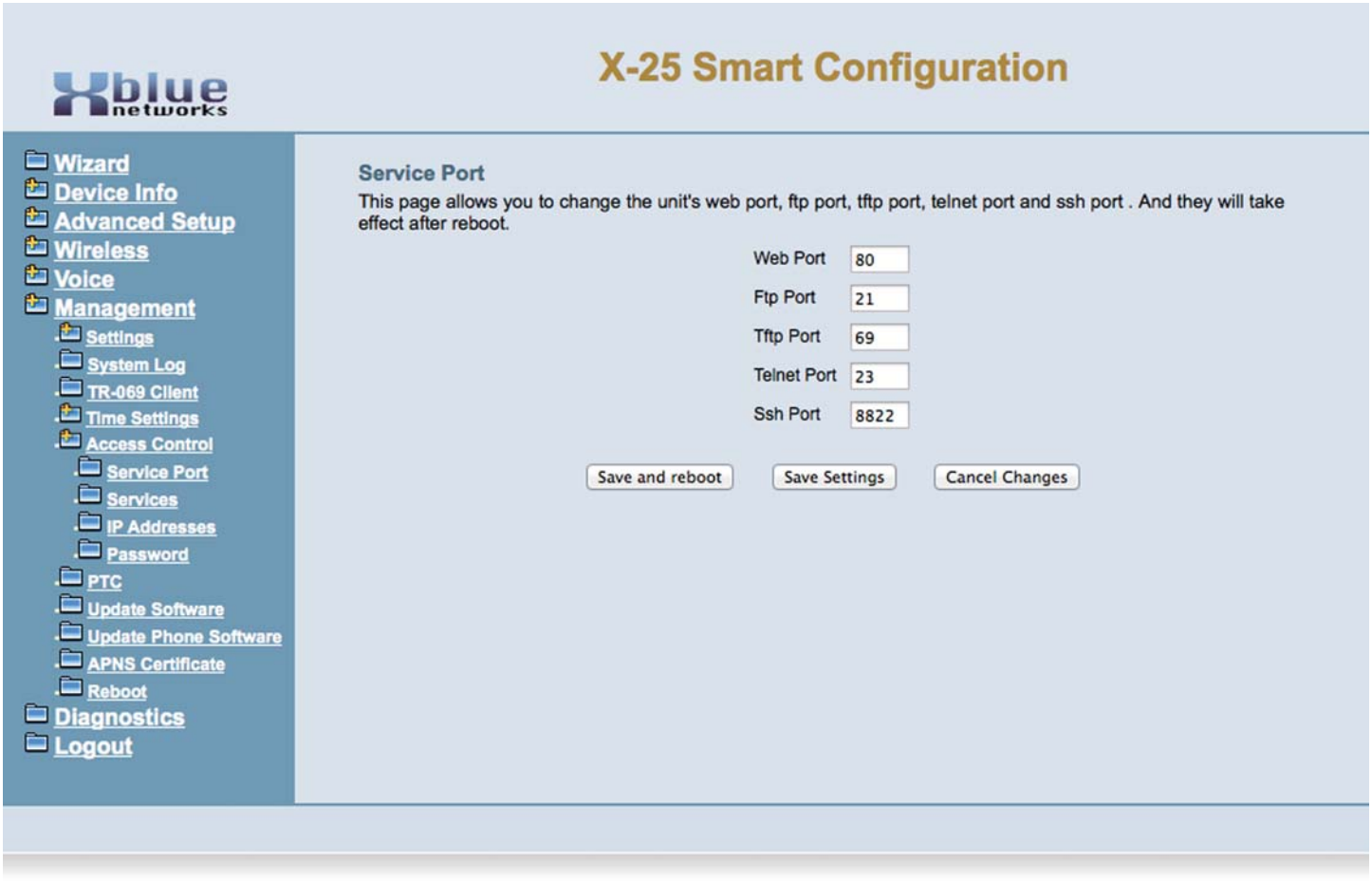
Access Control

The port, how or where a system can be accessed, specific IP address and changing passwords are all parameters that are set in Access Control.

Service Port

At default the system uses commonly used ports for the Web, FTP, TFTP, Telnet and SSH parameters. Since these are “Virtual” ports, you my use any number from 1 to 64,000. It is common to use easy to remember numbers such as the year you were born or 1492 or 1620, etc. For security reasons, you will want to change all five ports, especially the “Web Port”!

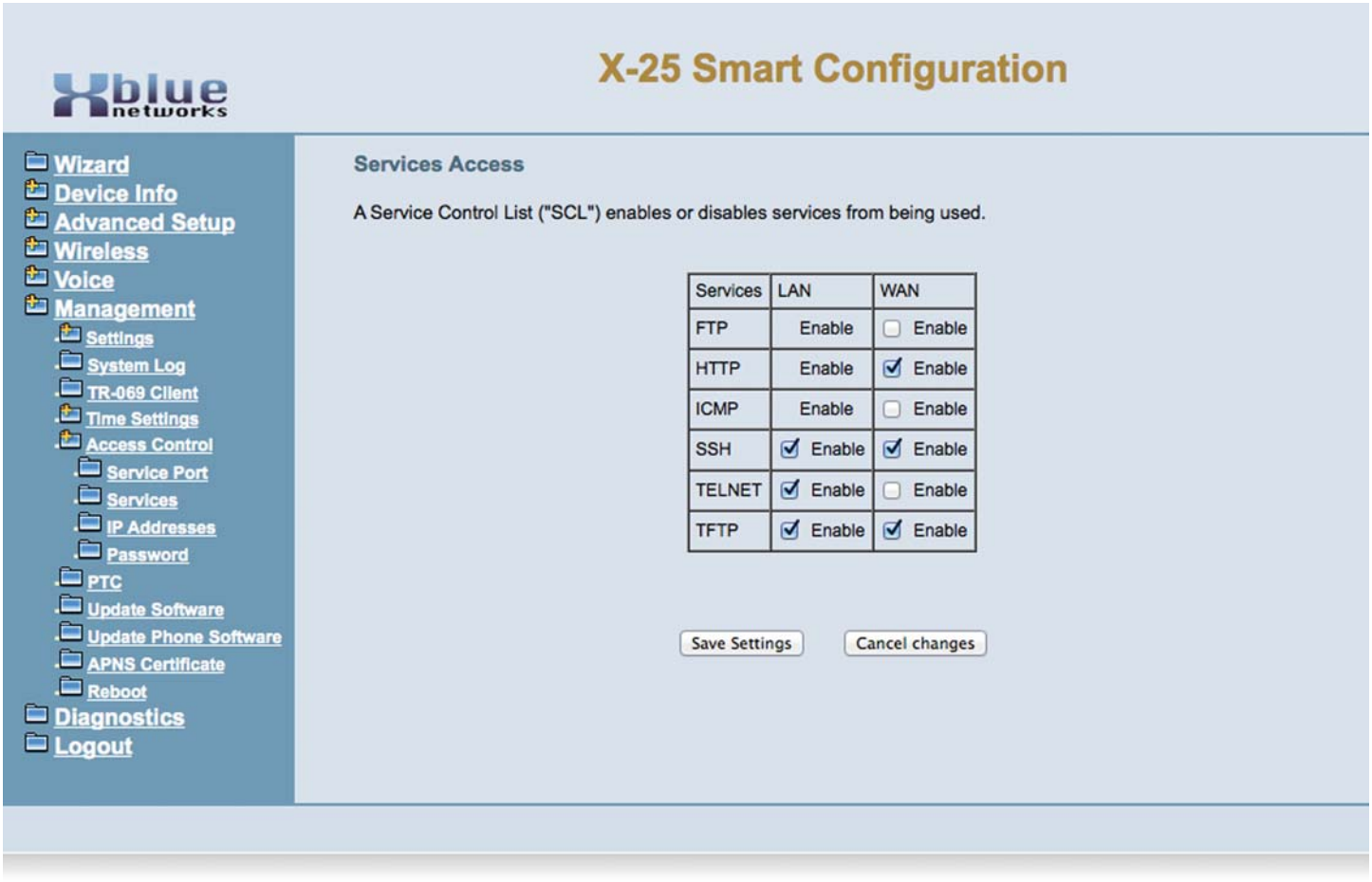
Once you have changed the Web Port, you will need to access the system the following way: http://xxx.xxx.xxx.xxx:yyyyy Where “xxx.xxx.xxx.xxx” is your system’s fixed IP address, and yyyyy is the new port number. For example, you may enter http://74.75.221.120:1492



Services

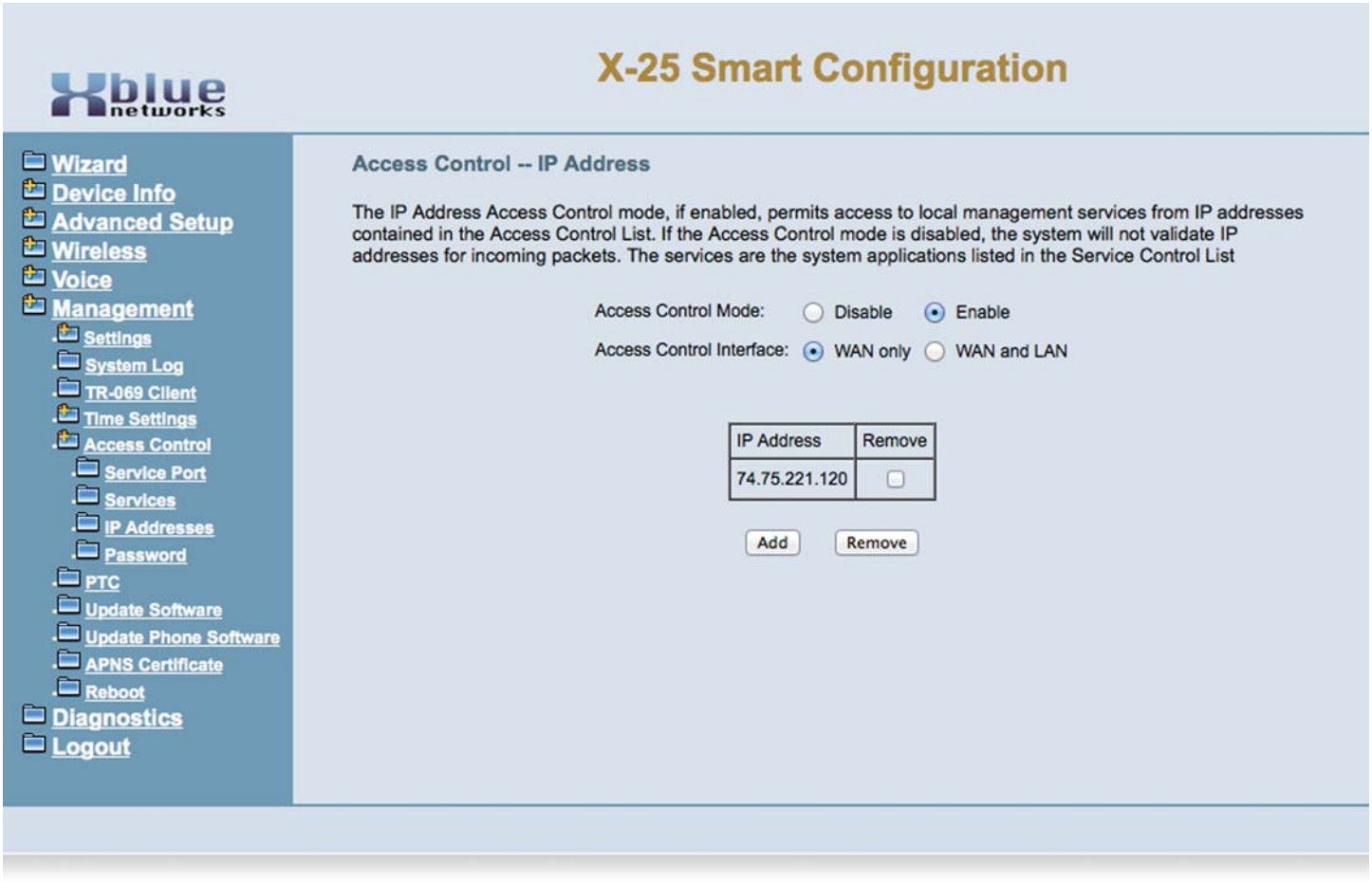
Services Access is used to help secure the system by allowing or denying which service will be available for the LAN or the WAN ports. The LAN port is enabled for FTP, HTTP and ICMP, all other parameters can be enabled by checking or disabled by unchecking the parameter. Depending on your network configuration, you may or may not want to have some of these parameters enabled or disabled.

One parameter, on the WAN side, that should be disabled is ICMP, which allows other devices to locate your system right over the Internet. If only the WAN port is connected, and the LAN port and Wireless port is disabled, you will need to enable “http” or you will not be able to connect to your system. However, if your LAN port is connected or the Wireless is enabled, and the system is connected to the Internet, you may want to uncheck all of the WAN parameters.



Access Control - IP Address

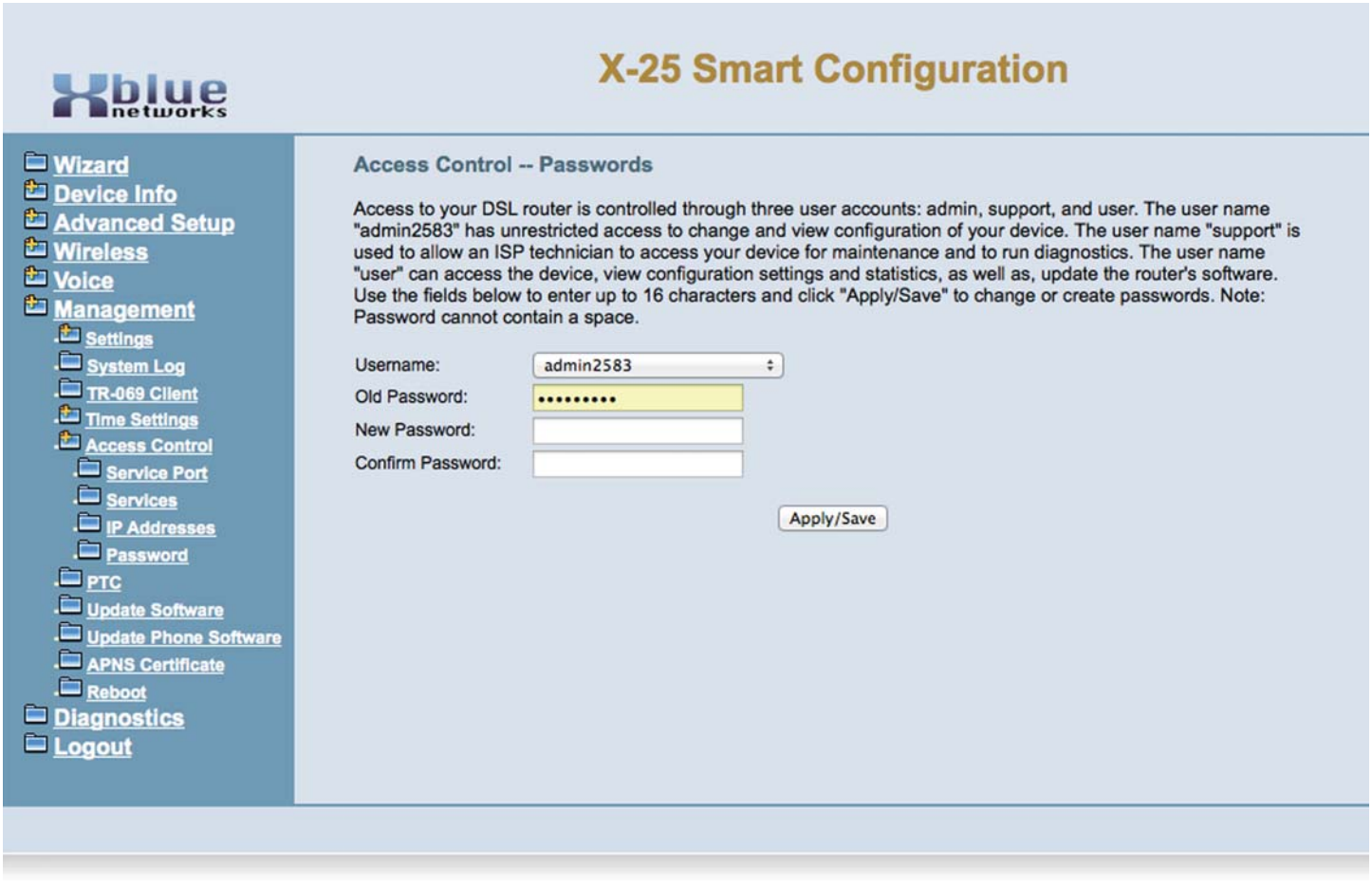
To further secure your system, you may enable IP Address, which will validate the IP Address of any device trying to enter programming in your system. If the IP Address is not listed, the attempt will be rejected.



Password

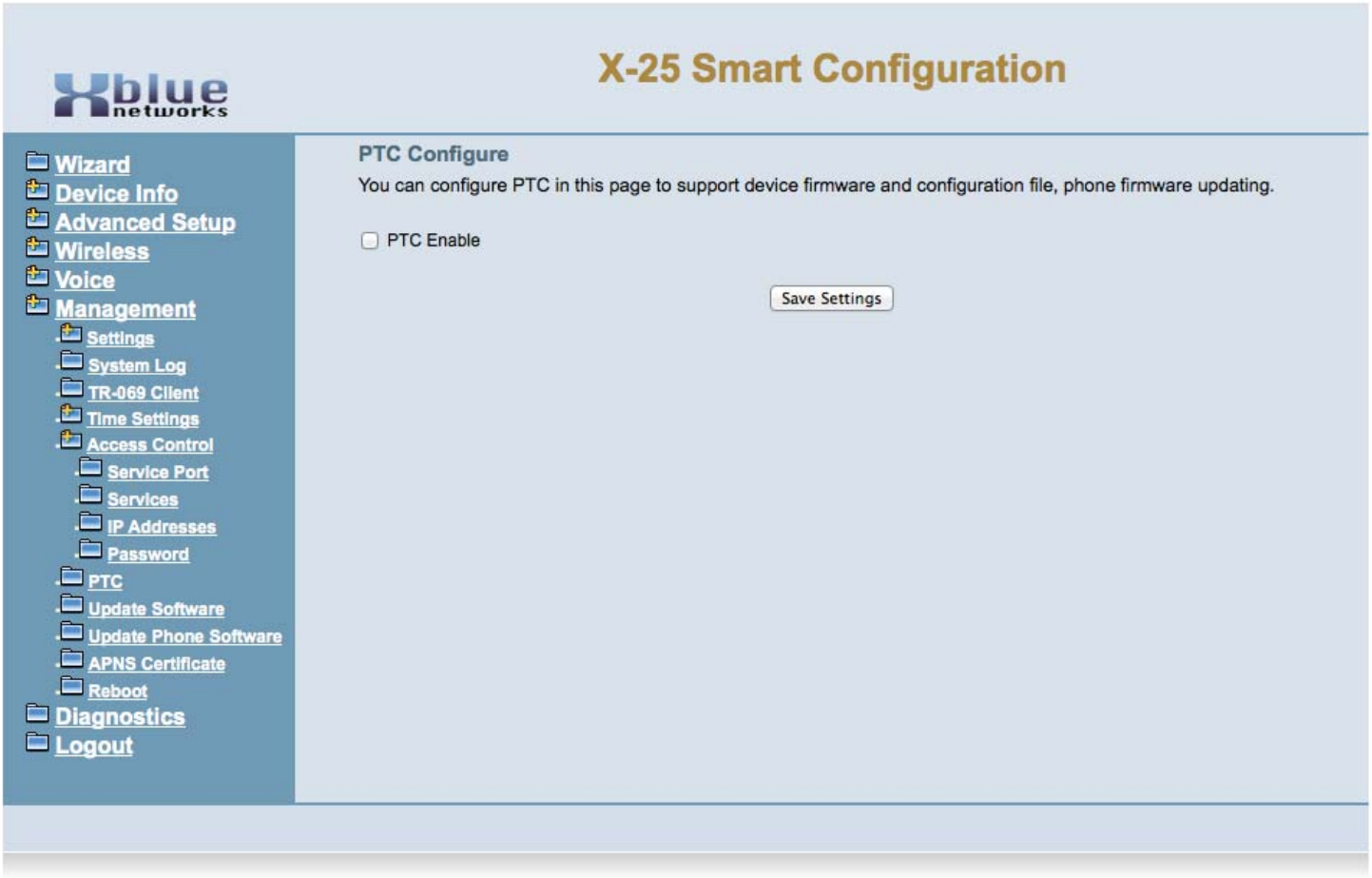
The system has 3 passwords; admin2583, and Support both have administration rights and User which has limited rights. All passwords should be changed as soon as the system is installed and operational. For security reasons, the password for your system is tied to the system’s MAC address. The MAC address can be found on the label on the back of the system. Locate the MAC Address which is written xx:xx:xx:xx:xx:xx. Using the last three octets (last three sets of alphanumeric characters) will be added to the word admin to create your password. For example, your system’s MAC Address is 00:19:15:e4:da:c3, you will enter admin2583 as the user name and admine4dac3 (all lower case) as the Password. Support uses support as the login name and admine4dac3 (all lower case) the same password, and the user password is user.

To ensure the security of your system, it is important that you change these and all default passwords as soon as possible.



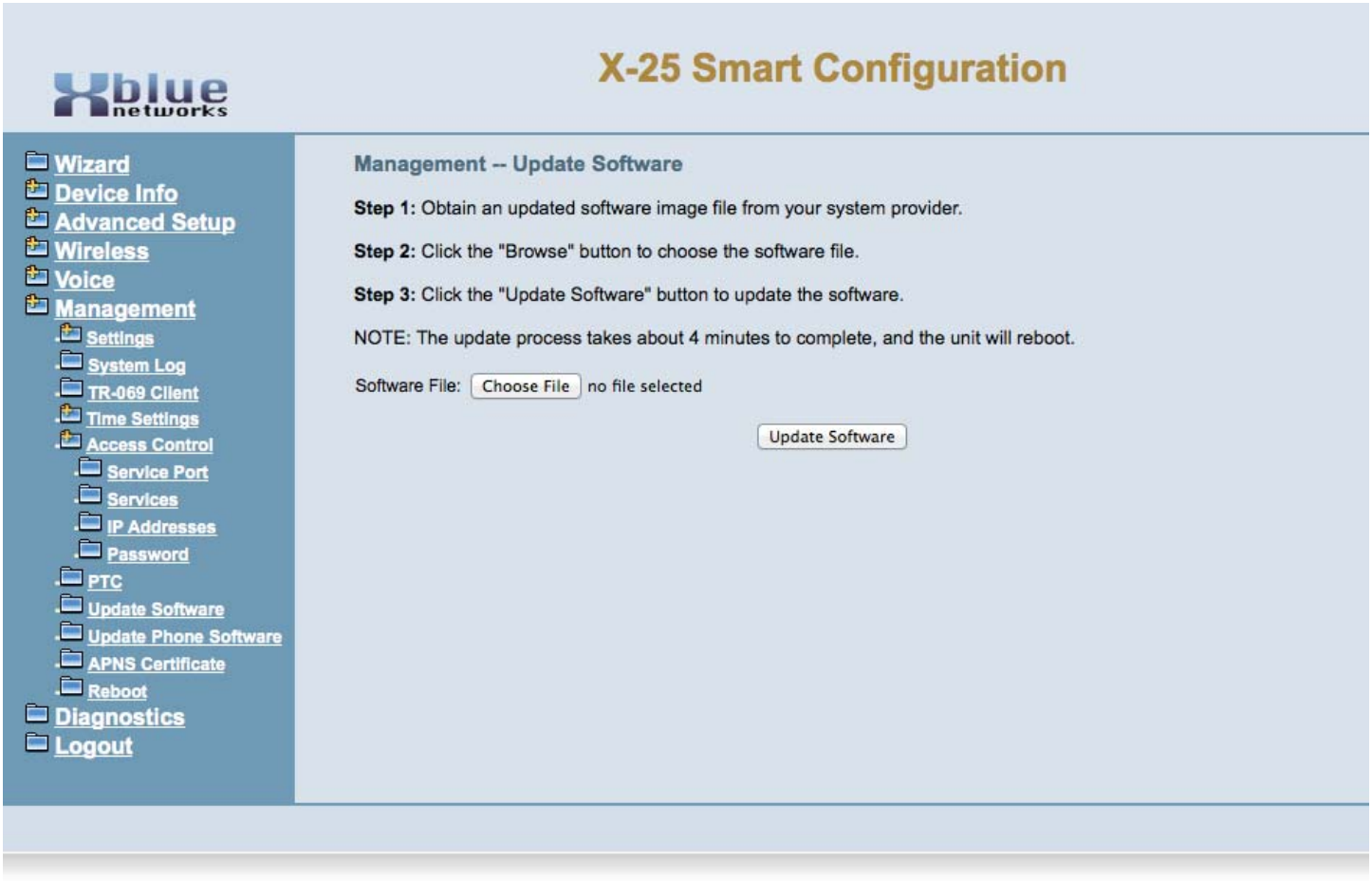
PTC Configure

You can configure PTC in this page to support device firmware and configuration file, phone firmware updating.



Update Software

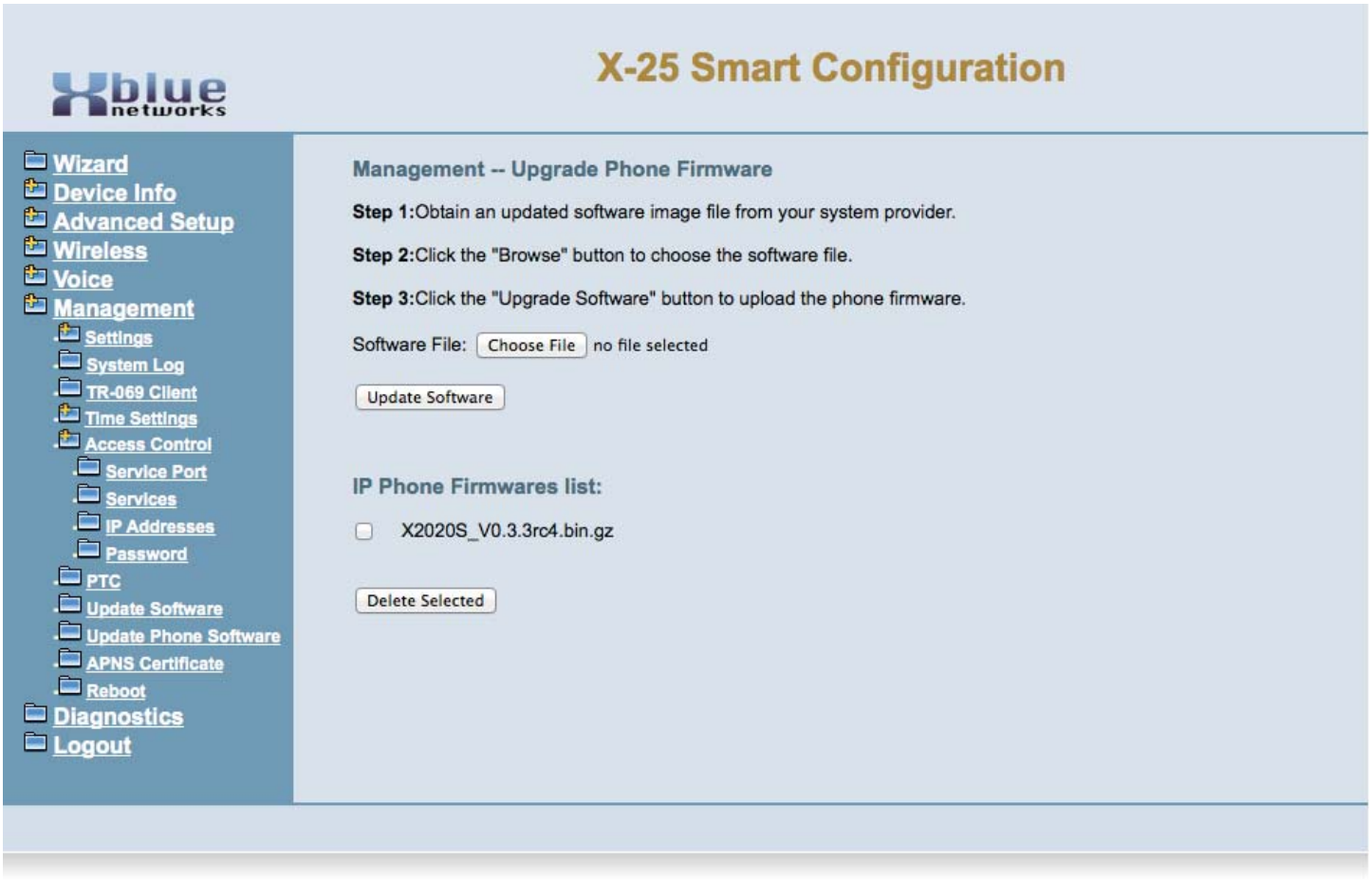
XBLUE Networks may, occasionally put new version of software on their website. Locate and download the software and save it on your local computer’s hard drive, in a location that the can be easily found. To check for new software go to http://xbluenetworks.com/x25-support.html and click on the “Downloads” Tab and download the newest software. After the software is downloaded, click on “Chose File”, link to the downloaded software and then click “Update Software” - Your system will be off line for up to 7 minutes, and will automatically reboot when the upgrade is complete.



Upgrade Phone Software

The system can be set up to automatically upgrade telephones connected to your system once you have uploaded a new “image” to the system.

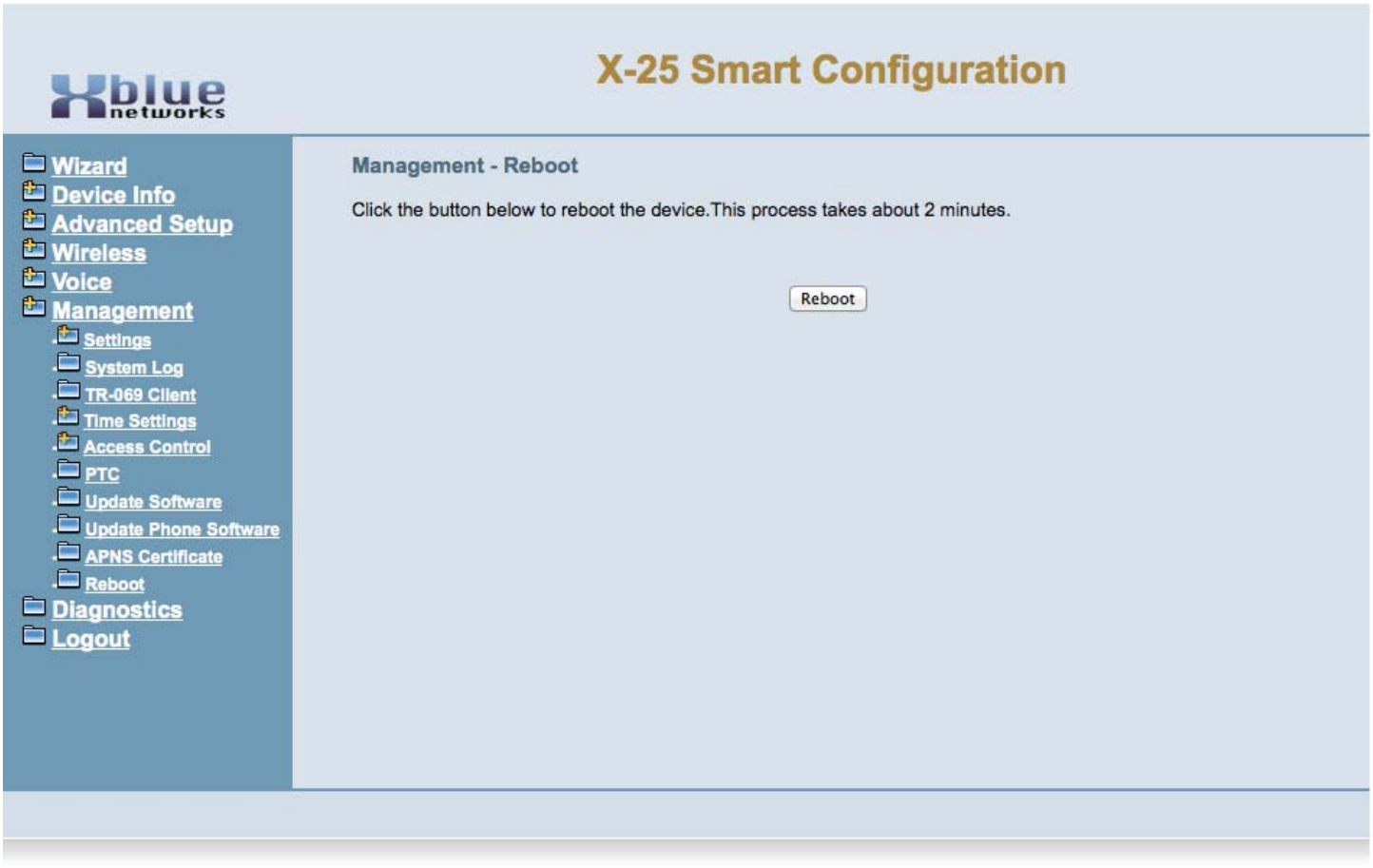
XBLUE Networks may, occasionally put new version of software on their website. Locate and download the software and save it on your local computer’s hard drive, in a location that the can be easily found. To check for new software go to http://xbluenetworks.com/x25-support.html and click on the “Downloads” Tab and download the newest software. After the software is downloaded, click on “Chose File”, link to the downloaded software and then click “Update Software” - Your system will be off line for up to 7 minutes, and will automatically reboot when the upgrade is complete.



Update APNS Certification

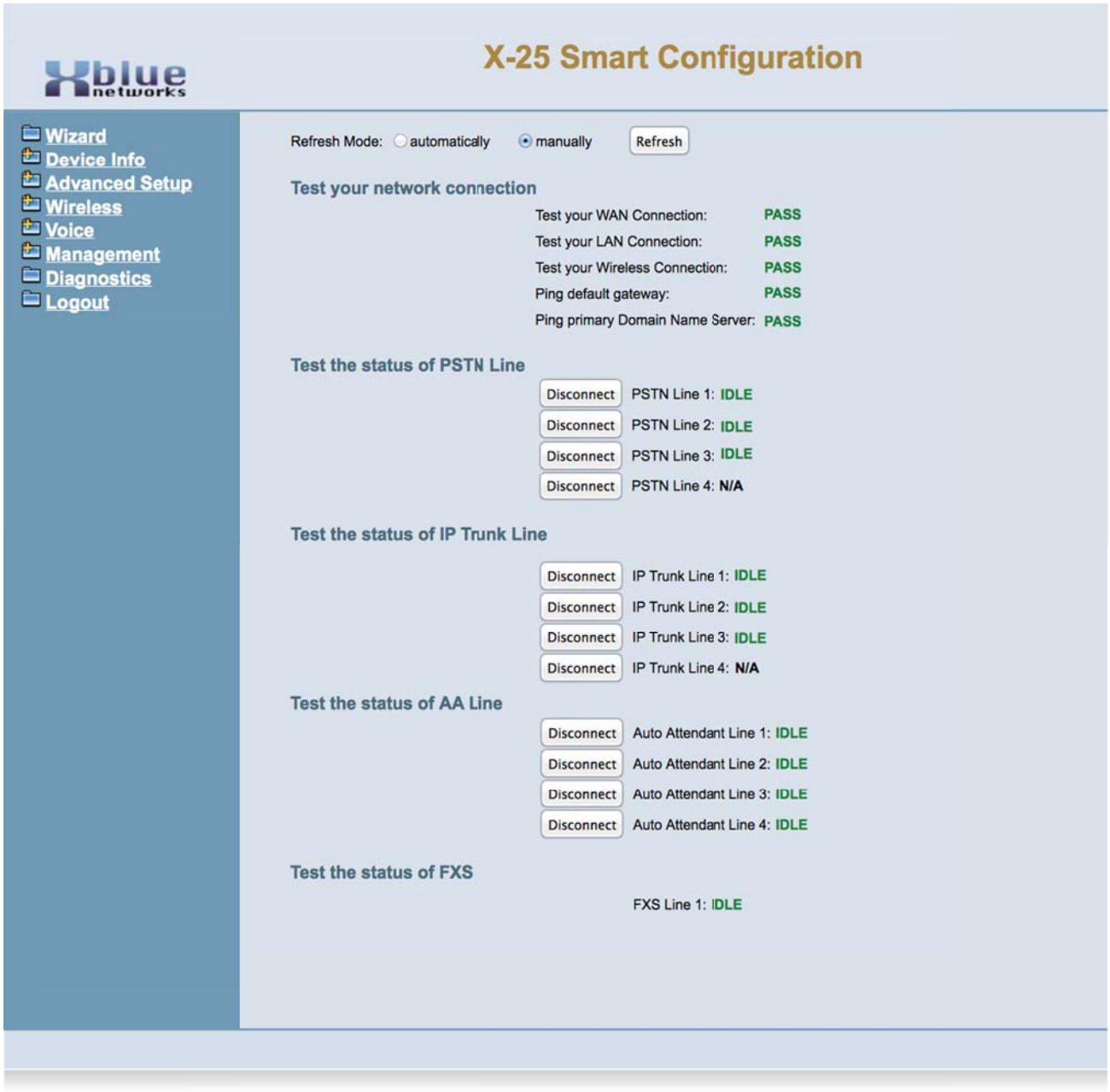
Reboot

The reboot page allows you to reboot the system from anywhere that you can connect to the system.



Diagnostics

The diagnostics page is a view only page that gives you the status of your network connections, PSTN and SIP Trunk Lines, Automated Attendant, and the FXS port.

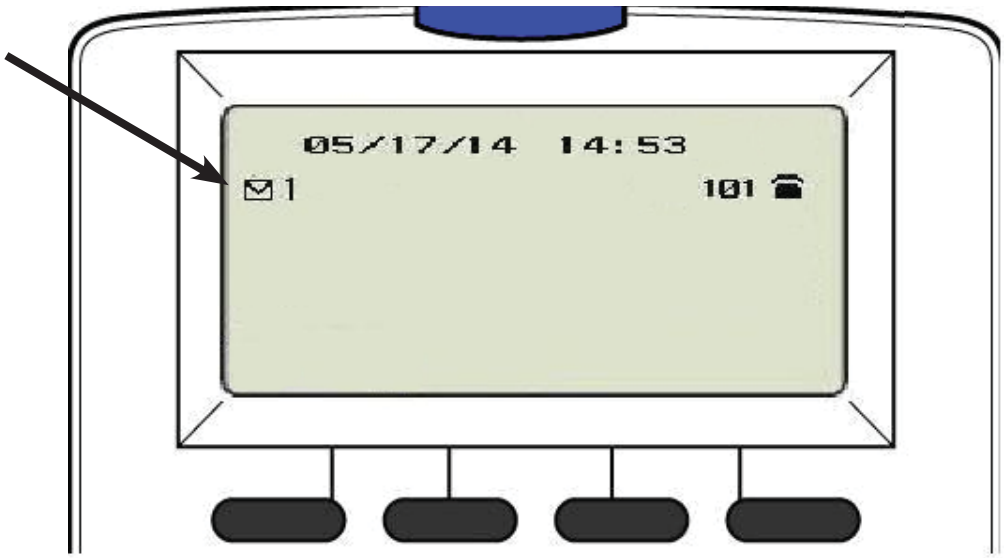


Voicemail Operation

Getting to know your voicemail

When the **X-2020** *telephone is connected to the system it can access voicemail by pressing the message button, which is the button with an ICON of an envelope.*

When a new message arrives, the light above the display will begin flashing and then display will show an envelope with the new message count.



“Voicemail Usage”

Setting up your Voice mailbox

It is a good idea to customize your voice mailbox when you begin working with your new telephone system. To do this you will press your message button and you will be prompted to enter your password. The default password is four zeros (0000).

The voicemail system will prompt you, but you may dial the digit you wish when it answers. Use the following steps to personalize your greeting and name.

1. Dial 3
2. Press 2 - to record a new greeting
3. Record your personal greeting and then press the # key. A common greeting will be “Hi, this is Jonathan (your name) I am either on my phone or away from my desk. Please leave a detailed message and I will return your call as soon as I can.”
4. The message is automatically saved
5. Press # to go back on level
6. Press 5 to record your name - say only your first and last name, and then press the # key. (Without this, your mailbox/extension will not be added to the dial by name feature).
7. Simply hang up the phone and your voicemail is set up and active.

It is also a good idea to change the mailbox password. At default, the password is four zeros (0000) and can be changed to any 4 digit sequence from 0000 - 9999.

After recording your personal greeting and name...

8. Press 4 to change the mailbox password
9. Enter the new four digit password
10. Press 1 to confirm the new password

Using your Voice Mailbox

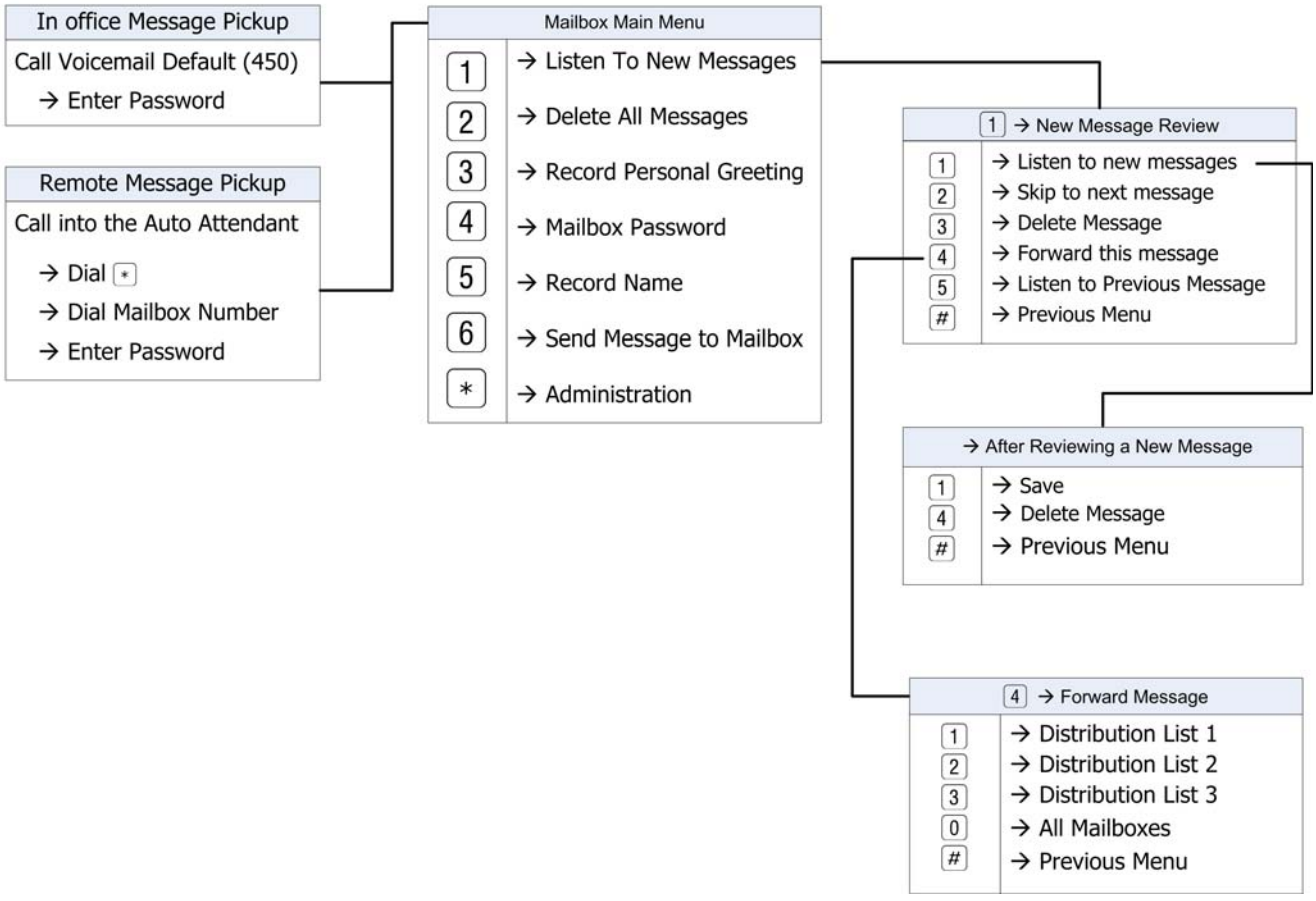
- Press 1 - to listen to new voicemail messages
  - Press 1 - to listen to new messages
    - Press 1 to save new messages
    - Press 4 to delete playing message
  - Press 2 - to skip to the next message
  - Press 3 - to delete the paying message
  - Press 4 - to forward the message to another mailbox
  - Press 5 - to listen to the previous message
  - Press # - to go to the previous message
- Press 2 - Delete all voicemail messages (New and Saved)
- Press 3 - Record your personal greeting
- Press 4 - Change your mailbox password
- Press 5 - Record your mailbox name
- Press 6 - Send a voicemail message directly to another extension

Remote Message Pickup

Messages, new and saved, may be picked up from a remote location. Call into the system and when the automated attendant answers...

- Press *
- Dial the mailbox number
- Dial your new or the default password

Voicemail User Flow Chart



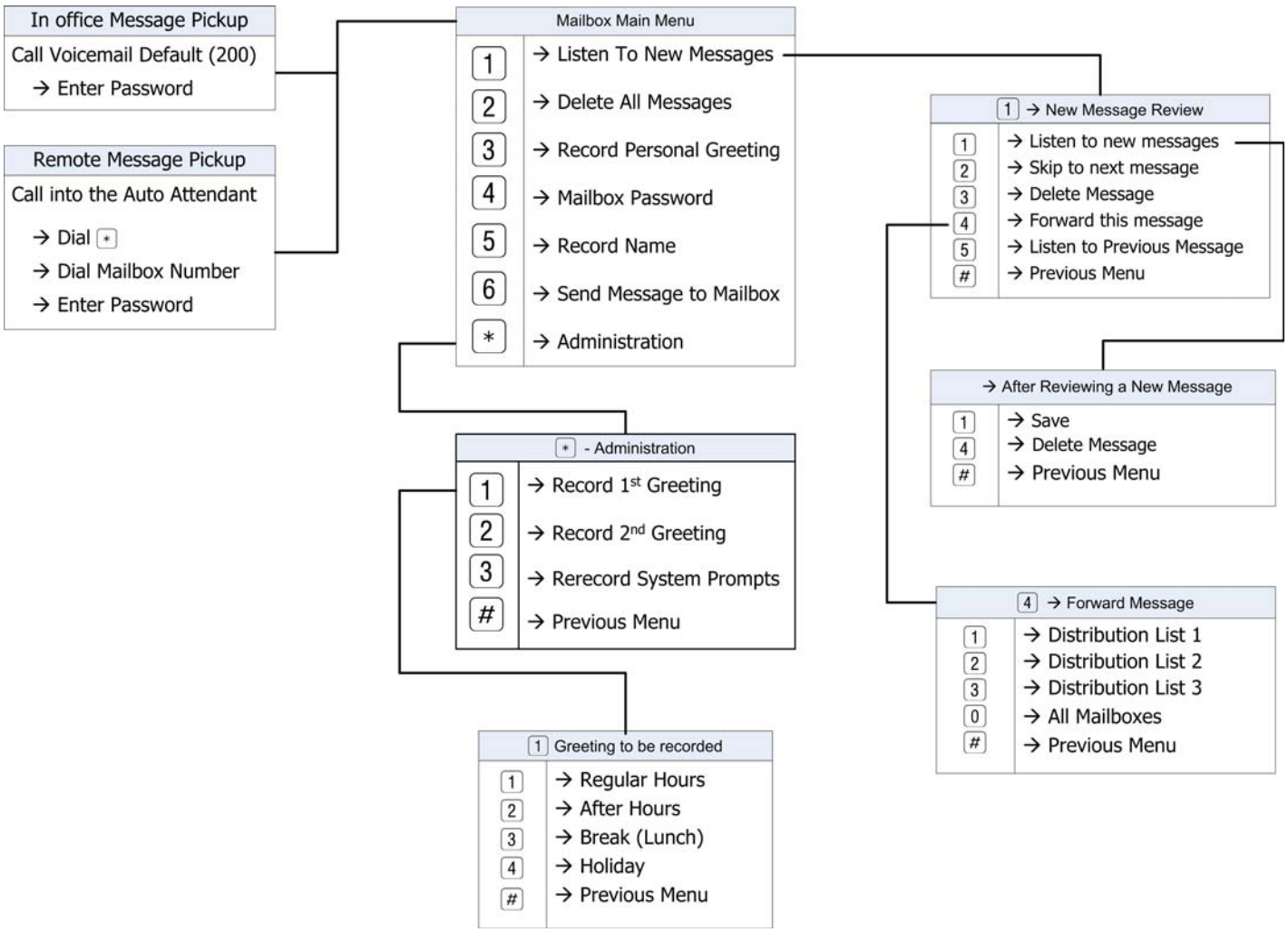
Voicemail Administration

Any mailbox can log into the administration mailbox to record the main system greetings. The automated (receptionist) attendant can answer with one of ten (10) menus, each with five different greetings; Day, Lunch, Night, Holiday and Temporary.

To log into the administration mailbox, first log into one of the existing mailboxes....

Press *

- Enter the administration mailbox password - the default is six zeros (000000)
- Dial 0 - to change the greeting mode from Day, Night or Temporary Mode
- Dial 1 - To record English Greeting
- Enter the Greeting (Menu) ID Number 0 - which is the default for all of telephone lines, additional menus are numbers 1 - 9.
  - Dial 1 to record the Day Greeting
  - Dial 2 to record the Night Greeting
  - Dial 3 to record the Break (Lunch) Greeting
  - Dial 4 to record the Holiday Greeting
  - Dial 5 to record the Temporary Greeting



Appendix A

ATTENTION

We strongly recommend that you secure your X-25 after the initial installation. At minimum you must change your passwords to protect it against illicit use! The program sheets at the end of this document are designed to help you through the programming process and give you a written record of the changes that you have made.

The next three parameters are the most important changes that you can make to secure your X-25.

System Passwords

Management --> Access Control --> Passwords

Change the default password for the three login accounts:

Login Account Names	Default Passwords
admin2583	admin + last 6 alphanumeric characters of the MAC Address
Support	support + last 6 alphanumeric characters of the MAC Address
user	user

The default password consists of the word “admin or support” plus the last 6 alphanumeric characters of the system’s MAC Address, which can be found on the back of the X-25 system. For example, for the login admin2583 password admincecde4, all lower case, or the login support password supportcecde4. New passwords can be up to 16 alphanumeric characters; we recommend at least 10, and must contain multiple upper and lower case letters, numbers and punctuation. For example: !wQMvxJfbg6!.

Telephone Passwords

Voice --> Phone --> Phone Extension

Change the default passwords for all 24 extensions, even if you do not have all of them in service. To ensure that the passwords are truly random, you can use a website such as www.random.org/passwords/ - which generates alphanumeric passwords form 8 to 24 characters in length. You will want to enter a unique password in each of the 24 extensions even if you are not using all of them.

Hiding the X-25

Management --> Access Control --> Service Port

Change the Web Port from 80 to a number between 1 and 64,000. The number should be easy for you to remember such as 1492, 1620 because it will be used when accessing your X-25. For example: When accessing your X-25 you will enter http:// your_IPAddress:1492 or http://192.168.10.1:1492 to login to your X-25.

[Continued]

Other important settings to change

Advanced Settings --> WAN

Enable Firewall

Wireless --> Basic --> Primary

Change the SSID – Do not use your company name – use a hobby like flyfishing and then click on Hide Access Point so that it is not visible to everyone that is looking for Wireless connections.

Wireless --> Security -->

[the above entered SSID] name changes may take up to 5 minutes before appearing. Once it appears, select the Network Security Type that you would like to use or if already in service, change the password.

Wireless --> MAC Filter

To further secure your wireless connection, enter the MAC address of each device that will be allowed to connect to the Wireless Network. No other devices will be allowed to connect until their MAC address is entered.

Voice --> Voicemail --> General

Change the existing “Admin Password”, which at default is 000000 (6 Zeros) to a new 6-digit number between 000000 - 999999

Voice --> Voicemail --> General

Make sure that DISA is disabled

Voice --> Voicemail --> Phone Extension --> Configuration

Click on Configuration for each extension and enter a new 4-digit password for each voice mailbox.

Voice --> System --> SMDR

Configure SMDR – set it to Local and both and then click on save

[Continued]

Voice --> Trunk --> Call Routing

These entries assume that Group 4 is not being used and will route calls that are 12 digits or more, or that start with 011 to line group 4, which has no telephone line access.

From	To	Min	Max	Del	Insert	Destination
200	[Area Code -1]	10	10	0	1	Group 1
[Area Code + 1]	899	10	10	0	1	Group 1
1200	1899	11	11	0		Group 1
200	999	12	99	9		Group 4
011	011	12	99	9		Group 4

[Area Code -1] – enter your local area code – 1. For example, the area code in New Hampshire is 603, so you would enter 602.
[Area Code +1] – enter your area code + 1. For example, the area code in New Hampshire is 603, so you would enter 604.

Voice --> Trunk --> Call Restriction

This entry will deny calls that begin with 011

From	To	Trunk Access	COS	Table Type
011	011	N	0	Deny

Once you have completed this procedure it is a good idea to create a back up that includes the new settings.

Advanced Settings --> Upnp

Uncheck “Enable Upnp protocol”. Thus disabling the telephones ability to automatically register to your X-25.

To create a backup of your new database:

Management --> Settings --> Backup

Save this in a location that is easy to locate if it is needed.

[Continued]

Management → Access Control →Passwords		
	Default Password	New Password
Login Name – admin	Last 6 of the MAC address (lower case)	
Login Name – support	Last 6 of the MAC Address (lower case)	
Login Name – user	user	

Management → Access Control→ Service Port		
	Old	New
Web Port	80	
FTP Port	21	
Fftp Port	69	
Telnet Port	23	

Voice→Voicemail→General		
	Old	New
Voicemail Administration Password	000000	

Wireless→Basic→Primary Wireless→Security→SSID			
	SSID Name	Password	Hide SSID
Primary			
Guest 1			
Guest 2			
Guest 3			

Feature Enable/Disable		
	Old	New
Advanced Setup→WAN - Firewall	Disabled	Enable
Voice→System→SMDR	Disabled	Enable
Voice→Voicemail→General - DISA	Disable	Disable

Voice → Phone → Phone Extension Voice → Voicemail → Phone Extension → Configuration		
Passwords to change	Phone Extension	Voicemail
101		
102		
103		
104		
105		
106		
107		
108		
109		
110		
111		
112		
113		
114		
115		
116		
117		
118		
119		
120		
121		
122		
123		
124		

Wireless→Mac Filter – Enter the MAC Addresses of all Wireless Devices	
Device	MAC Address i.e. 00:19:15:CF:BC:58

Voice → Trunk → Call Routing							
From	To	Min	MAX	Del	Insert	Destination	Entered
200	Area code 1	10	10	0	1	Group 1	
Area Code 1	899	10	10	0	1	Group 1	
1200	1899	11	11	0		Group 1	
200	999	12	99	9		Group 4	
011	011	12	99	9		Group 4	
0	#	1	99	0		Group 1	

Voice → Trunk → Call Restriction					
From	To	Trunk Access	COS	Table Type	Entered
011	011	N	0	Deny	

Appendix B

X-25 Music on Hold File Preparation

Scope:

The X-25 comes standard with a single Music on Hold song, which is played to callers that are Parked or put on hold. To further customize your X-25, you may upload a different song or create a special message to be played while callers are on hold. The maximum file size is 5 Meg (5,000K), and it must be Mono and not stereo. Also, depending on the quality of your telephone lines, you may need to adjust the volume.

Equipment or Supplies Needed

Personal Computer or Laptop running Windows XP SP2, Vista, Windows7
An Application to modify an Audio file
Or
Connection to the Internet to download an application

Downloading Applications

There are several different audio applications that can be used, but this bulletin will outline two; Goldwave and Audacity. Both of these applications can be downloaded from the Internet for free and will allow you modify a song or message on hold file.

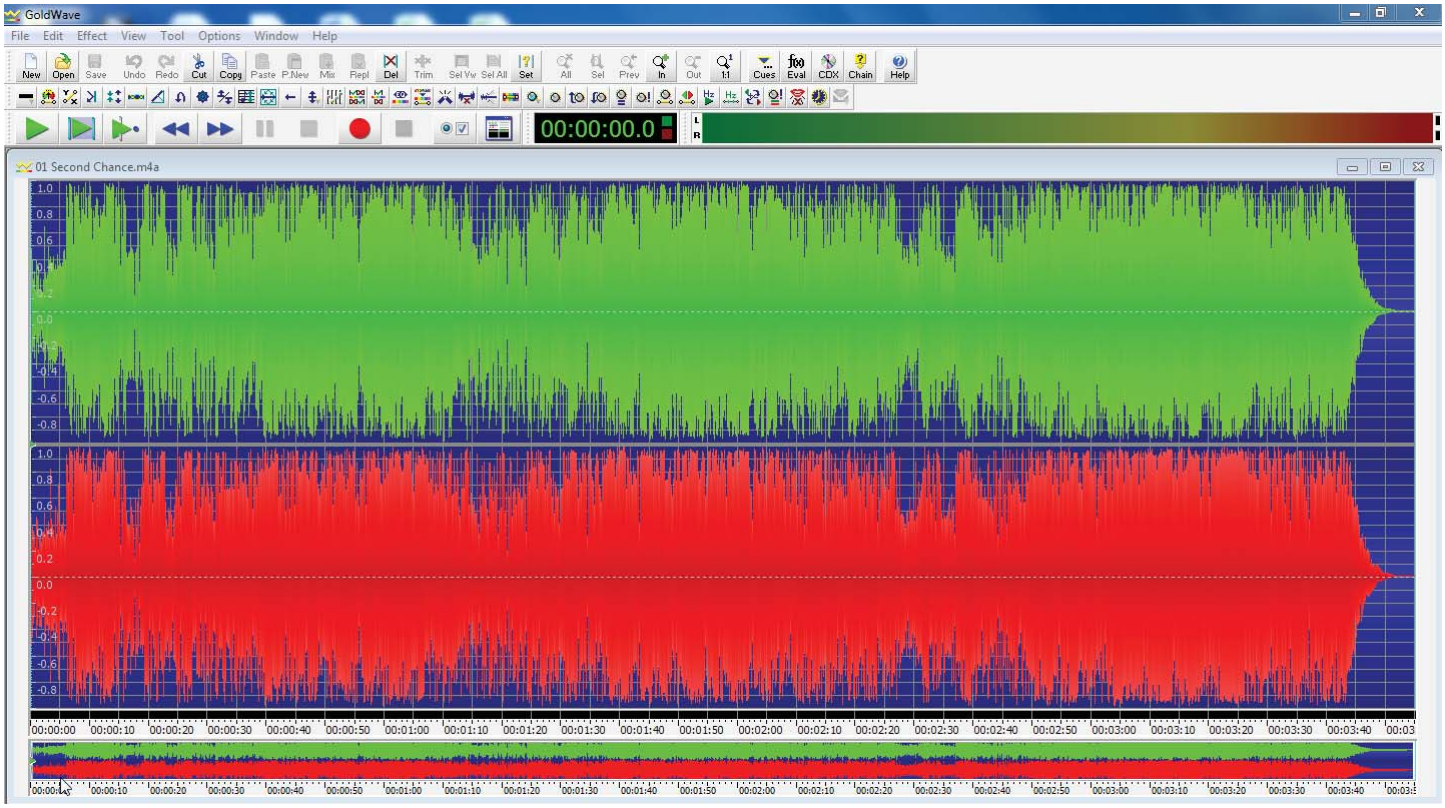
Use the following link to download goldwave:
http://download.cnet.com/GoldWave/3000-2170_4-10001099.html

Use the following link to download audacity 1.3.13-Beta version:
http://download.cnet.com/1770-20_4-0.html?query=Audacity+1.3.133&platformSelect=Windows&tag=srch&searchtype=downloads&filterName=platform%3DWindows&filter=platform%3DWindows

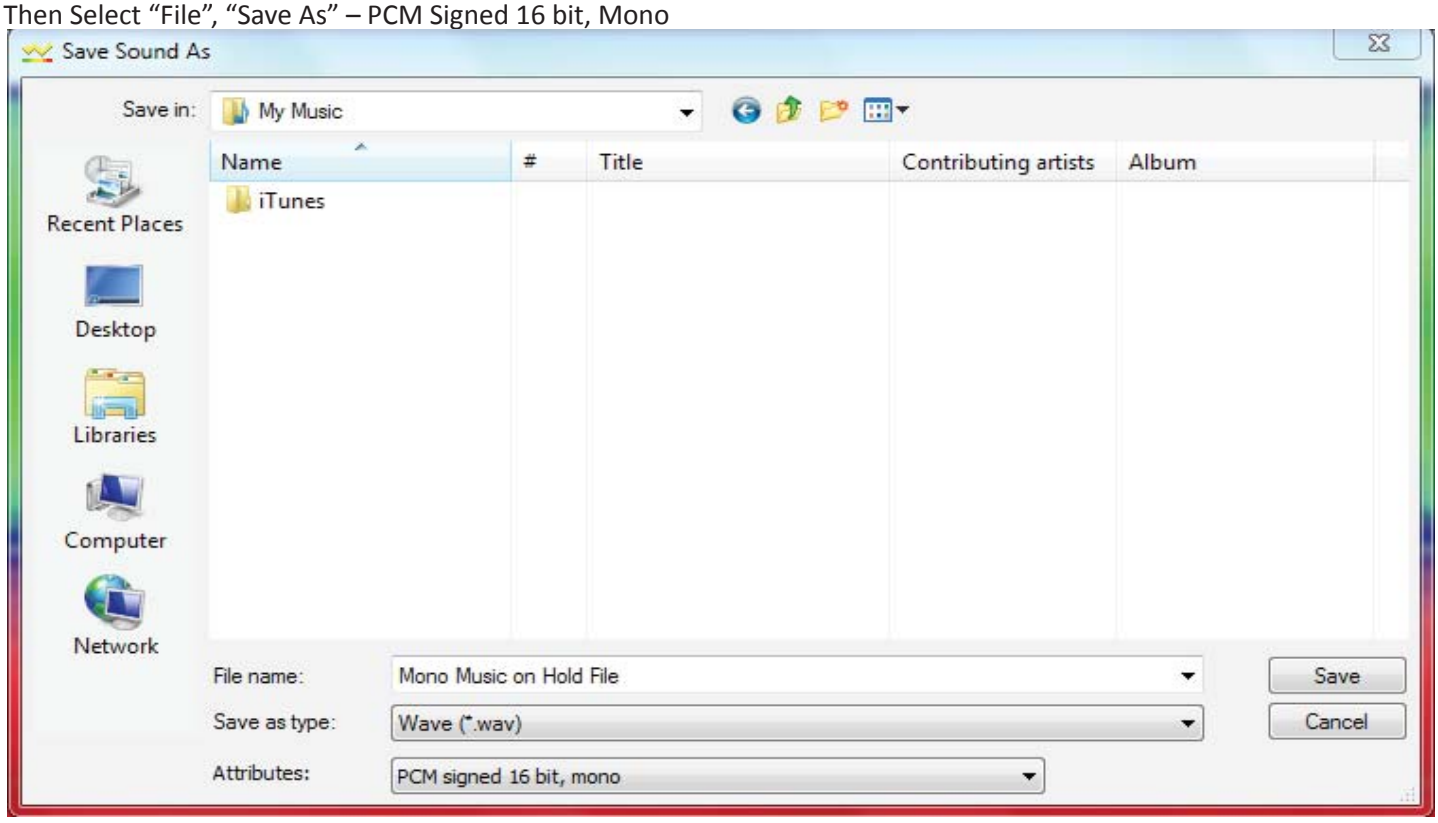
Download and run setup to install the desired file.

Goldwave

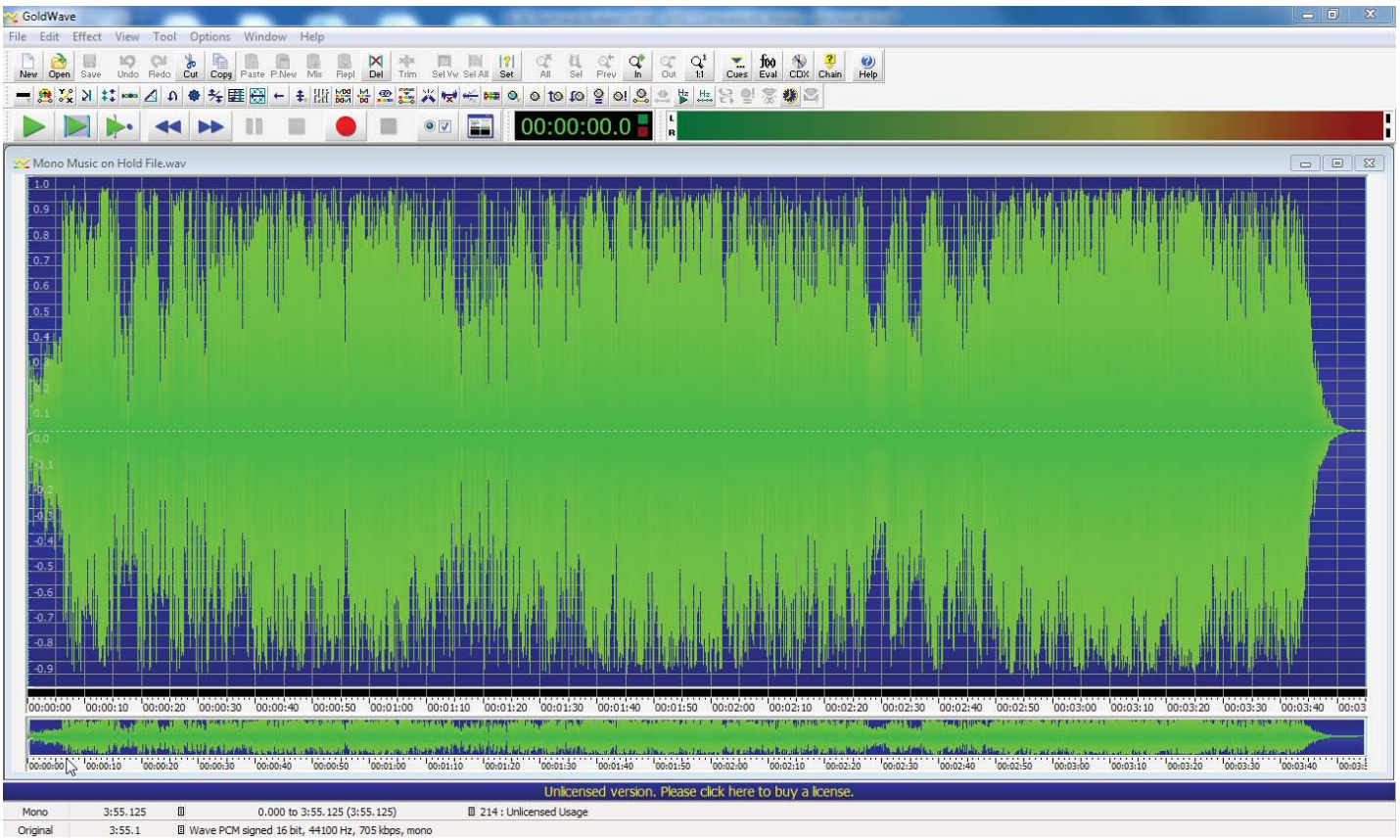
Launch Goldwave
Then go to “File” --> “Open” and locate the file that you want to use.



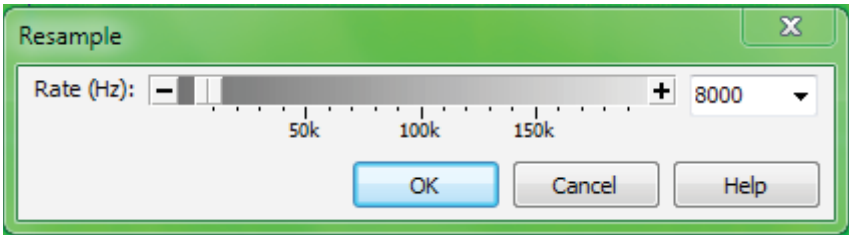
Then Select “File”, “Save As” – PCM Signed 16 bit, Mono



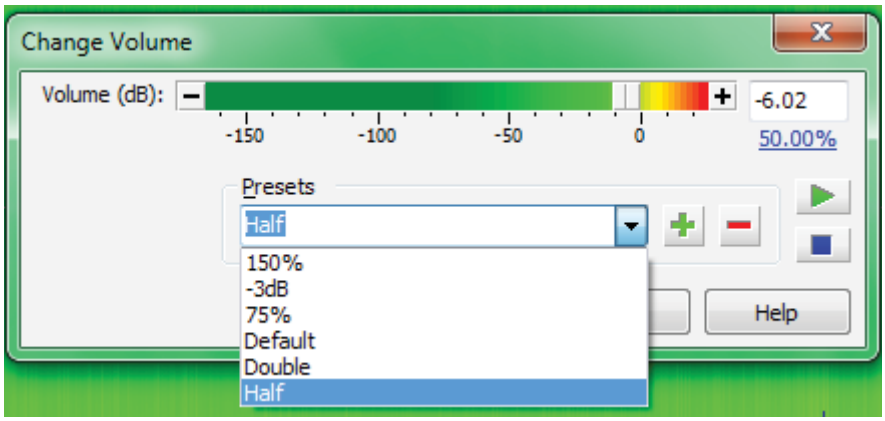
Then update the display to show the new “Mono” fact



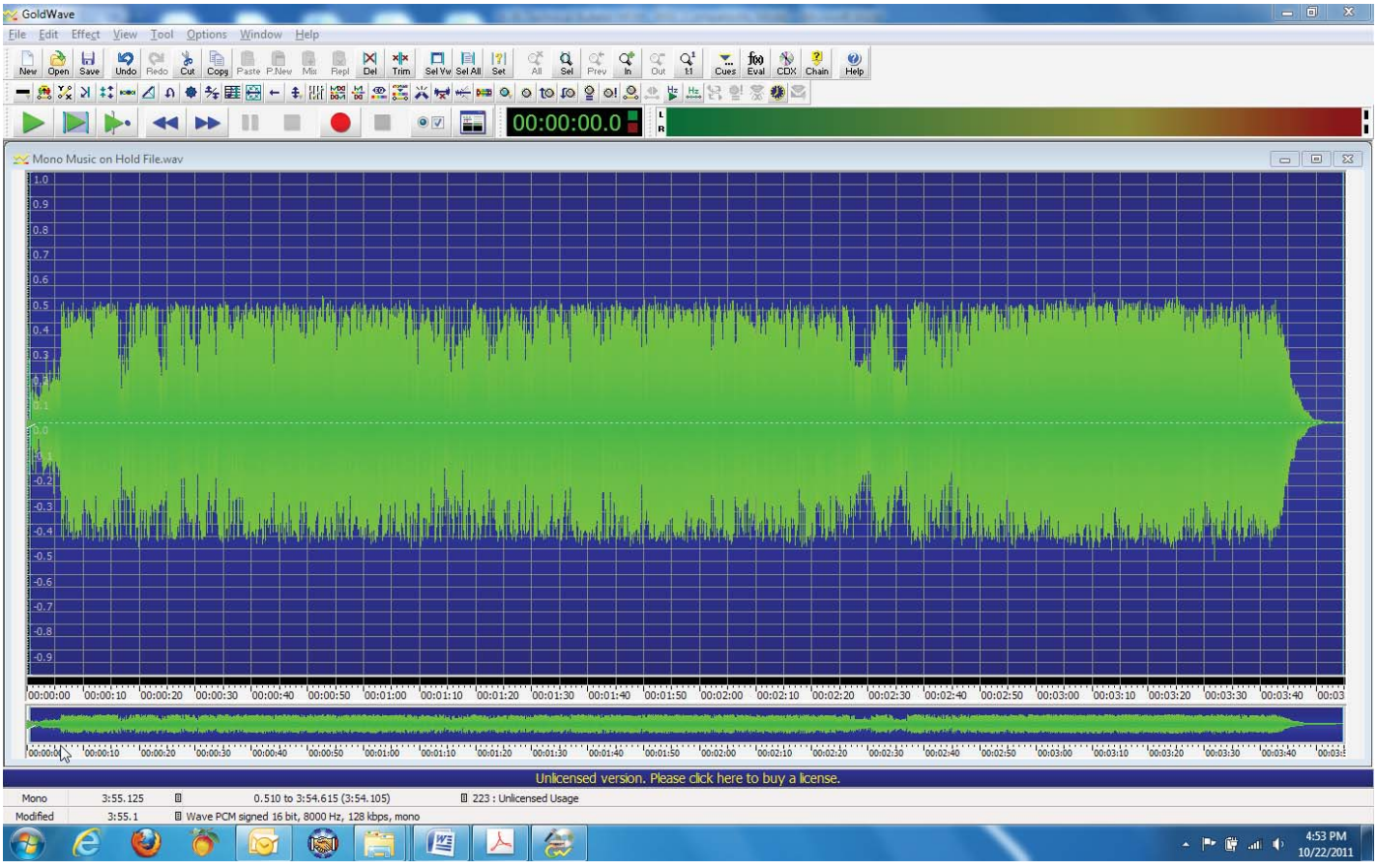
Then go to “Effect” and select “Resample” and using the dropdown menu select “8000”



Then go to “Effect” and select “Volume” “Change Volume” – Using the dropdown menu, select “Half” and then press “OK”



The Track will now be narrower, thus the file has a lower volume

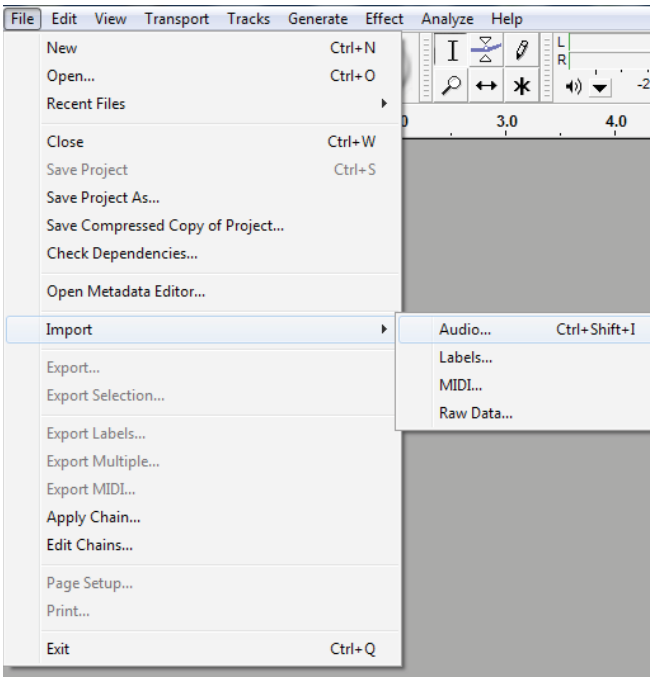


Select – “File” and then “Save” – Locate the file to verify that it is 5,000K or less. If the file is more than 5,000K you will need to “Trim” some of the file. Just highlight the areas to trim and press the “Trim” button and then save. Check again. Continue this until the file is under 5,000K.

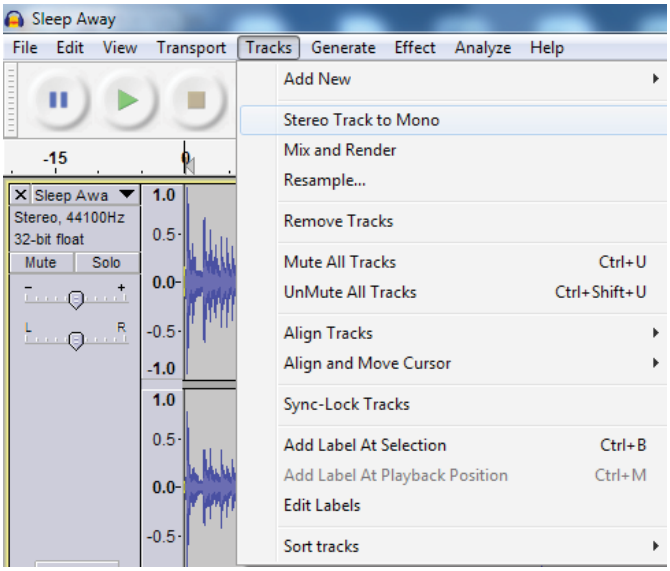
Go to File Name and Upload

Audacity

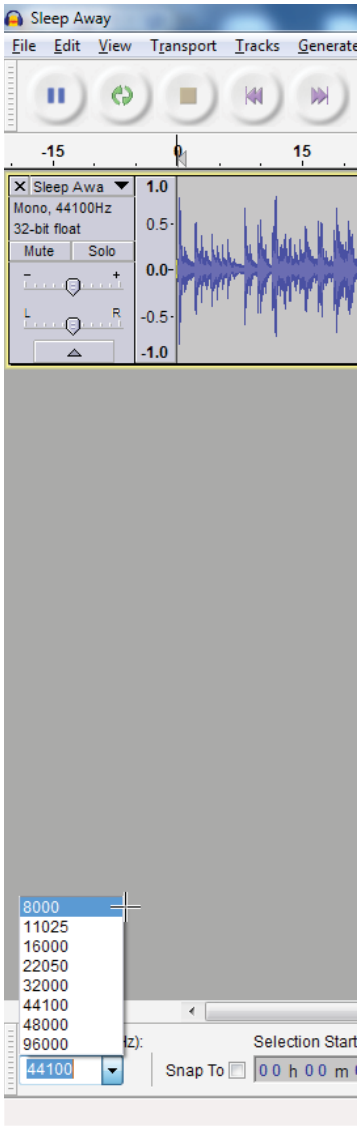
Launch Audacity and go to “File” then “import” - Audio File. Then locate and double click on the desired file.



Go to “Tracks” and select “Stereo to Mono”

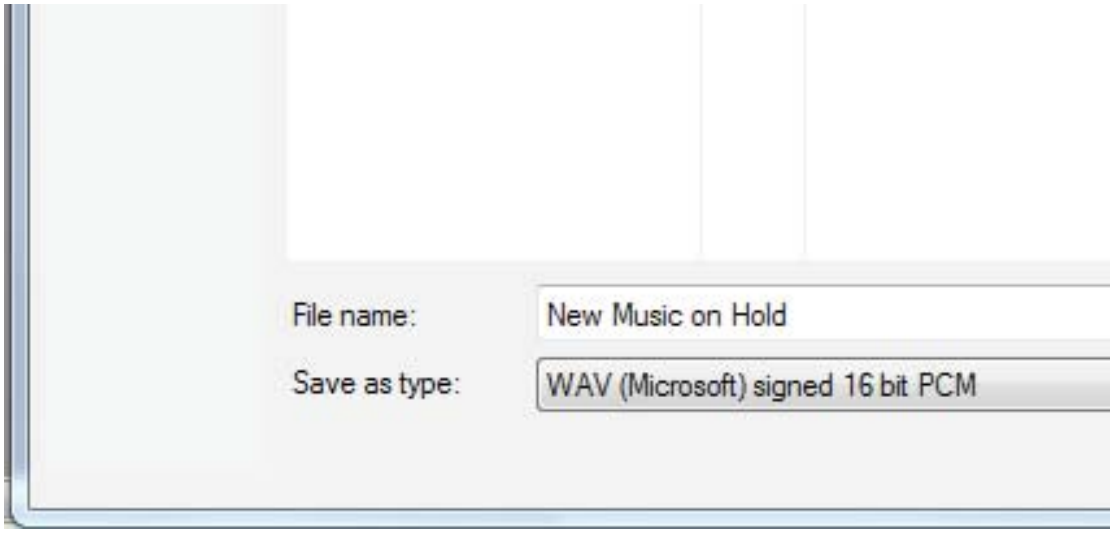


To change the sampling rate, locate the “Project Rate (Hz)” in the lower left and change it to 8000.

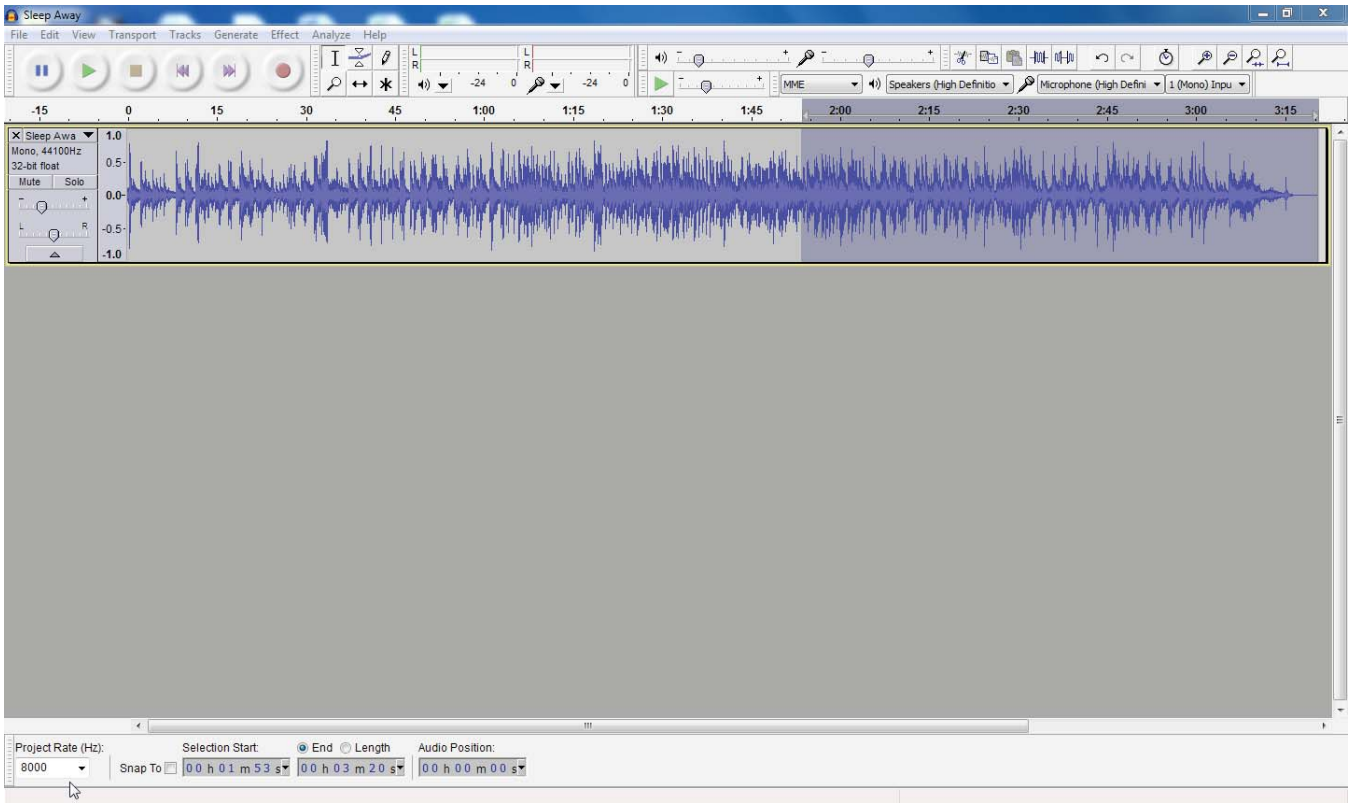


To lower the volume, locate the volume slide and slide it to the left.

Once you are happy with the file, save it by going to: File, Export and export it as a “WAV (Microsoft) signed 16 Bit PCM – file. Saving the file on your desktop will make it easy to locate.



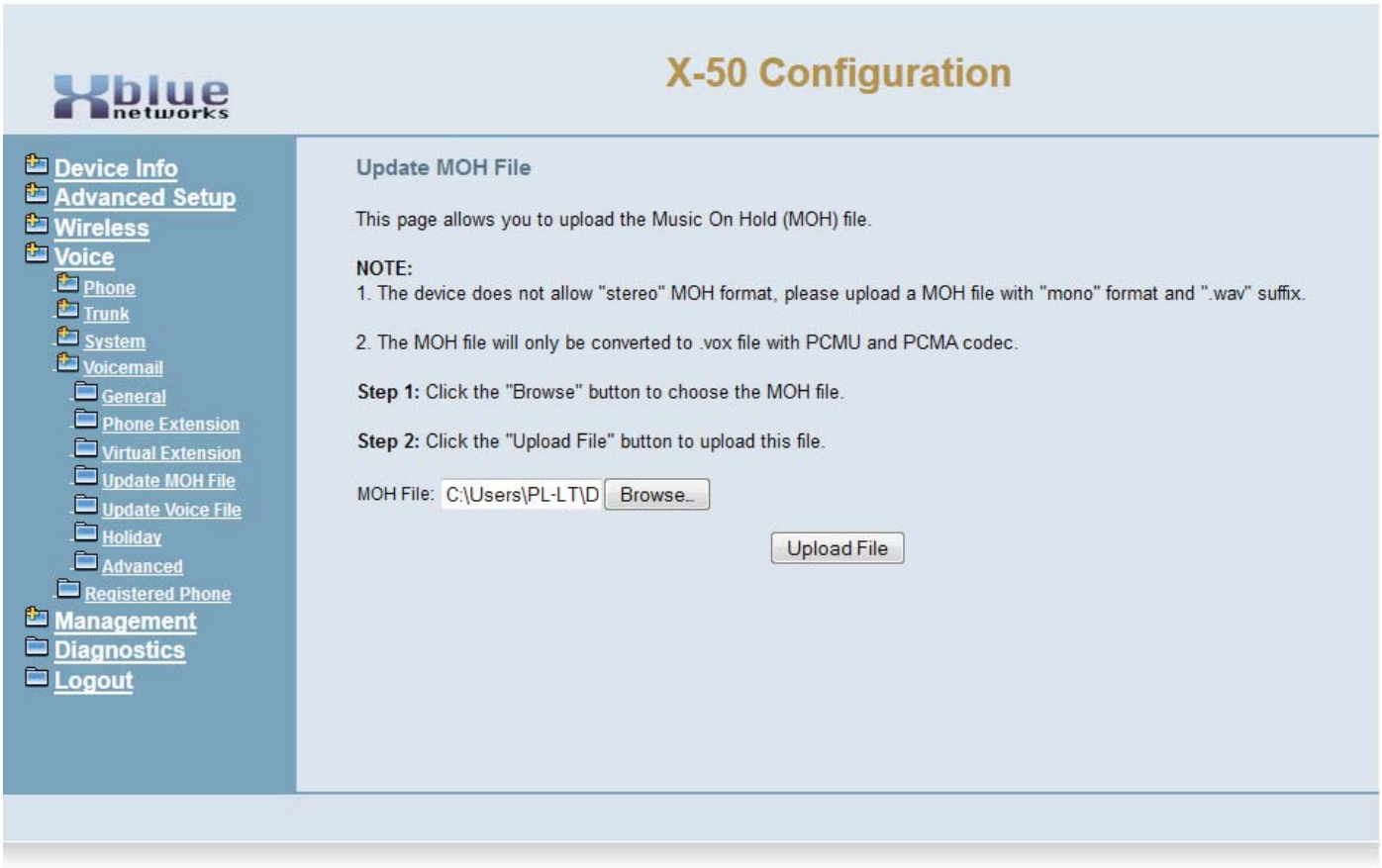
Locate the file to verify that it is 5,000K or less. If the file is more than 5,000K you will need to remove part of the song. To do this, click and hold the mouse button down in the track and then slide the mouse, highlighting the area to be removed. Then press the “Delete” button on your computer keyboard. Save the file and make sure that the file is less than 5,000K.



File Name and Upload

Locate your new Music on Hold File.
Right Click and select “Rename”
Change the name of the file to mohpcmu and leave it as a “Wav” file

Log into the X-25 and go to “Voice” “Voicemail” “Update MOH File”
Click Browse – and locate the mohpcmu.wav file
Check Upload File



You will need to reset your X-25 by unplugging it, waiting 5 seconds and plugging it in again.

Notes:

X-25 Installation Manual
XBLUE Networks, LLC

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